2014

Portsmouth Bicycle and Pedestrian Plan

Portsmouth Bicycle and Pedestrian Plan

Adopted by the Portsmouth Planning Board August 21, 2014

Project Team

City of Portsmouth
Rick Taintor, AICP, Planning Director
Juliet T.H. Walker, AICP, Transportation Planner

Toole Design Group
Nick Jackson
Laurie Pessah, AICP
Michelle Danila, P.E., PTOE
Patrick Baxter, P.E., PTOE
Peter Robie
Catherine Duffy, AICP
Jessica Mortell

Parsons Brinkerhoff
Royd Benjamin, P.E.
Kirsten Torrance, P.E., PTOE

Acknowledgements

City Staff Steering Committee
Steven E. Achilles, Fire Chief
Dave S. Allen, Deputy City Manager
Brinn Chute, Senior Services Coordinator
Todd J. Croteau, Highway General Foreman
Brian F. Goetz, Deputy Public Works Director
Edward McDonough, School Superintendent
Mark C. Nelson, Parking & Transportation Division Director
Peter H. Rice, Public Works Director
Frank S. Warchol, Police Patrol Division Commander

Bicycle and Pedestrian Resident Advisory Committee
Jennifer Decker
Kirsten Howard
Stephanie Hurd
Karen Jacoby
William Lyons
Richard Matthes
Thomas Martin
Peter Newbury
Ned Raynolds
Andrew Richmond

2014
Portsmouth
Bicycle and Pedestrian Plan

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Chapter One INTRODUCTION

The City of Portsmouth Bicycle and Pedestrian Plan is a comprehensive strategy to make bicycling and walking safe, comfortable, and convenient for people of all ages and abilities. The Plan calls for a connected bicycle and pedestrian network and new programs and policies to help encourage people to walk and bike on a daily basis. This Plan builds on the city's considerable attributes and growing support for walking, bicycling, and "Complete Streets":

- In 2013, walking and bicycling commute rates in the City of Portsmouth exceeded the national average and are the highest of any community in New Hampshire. (5.7% of commutes were on foot and 2.4% were on bicycle, motorcycle, or taxi).
- In 2014, Portsmouth's Complete Streets policy was ranked 7th highest in the country by the National Complete Streets Coalition.
- In 2008, Portsmouth was named New Hampshire's "Most Walkable City." by Prevention Magaine.[1]
- Downtown Portsmouth has a WalkScore® of 86*, which reflects the city's compact, mixed use neighborhoods, aesthetic quality, and transportation choices.

The Bicycle and Pedestrian Plan will help make walking and bicycling in Portsmouth safer and more convenient citywide through a prioritized set of improvements to streets, sidewalks, and paths. The Plan was developed using data collection and analysis and included broad public and stakeholder involvement. The following sections provide an overview and description of the planning process and a summary of the public input.

*WalkScore is a private company that assesses walkability of communities based on a scoring system that considers a variety of factors including retail density, streetscaping, access to transit, and presence of sidewalks. Communities are assigned numbers 1 through100, with 100 as the highest score.

[1] "Portsmouth named most walkable city in N.H., 58th in nation" Seacost Online. Accessed online 2014. http://www.seacoastonline.com/articles/20080320-LIFE06-80320020

What is the Bicycle and Pedestrian Plan?

The Bicycle and Pedestrian Plan proposes specific bicycle and pedestrian improvements throughout Portsmouth and policies and programs that will support walking and bicycling in the city.

The Plan includes:

- A prioritized set of physical recommendations collected in a GIS (Geographic Information System) database that is compatible with the City's existing geographic data.
- A prioritized set of policy and programming recommendations.
- A narrative summary of the planning process and implementation strategy.

The Bicycle and Pedestrian Plan will inform and supplement the City's 2015 Master Plan.

Process

The Bicycle and Pedestrian Plan was developed over a ten-month period between November 2013 and August 2014. Throughout the project, City departments, local stakeholders and the general public provided input on the focus of the Plan and helped to shape the recommendations.

Steering Committee

A City staff steering committee, which consisted of representatives from Planning, Public Works, Public Safety, Senior Services, Schools and the City Manager's office, met five times during the project. These departments provided critical input during the development of the plan and will be responsible for overseeing the implementation of many of the plan's recommendations.

Public Outreach

The public played an important role in shaping the focus of the plan and contributed many ideas that were incorporated into the recommendations.

The Bicycle and Pedestrian Resident Advisory Committee, made up of residents and stakeholders interested in bicycle and pedestrian issues, provided input throughout the planning process. They also assisted with public outreach.

The general public contributed ideas through an online Wikimap, at two public meetings, and through comments submitted to the Planning Department.

The Wikimap is an interactive online mapping tool created as part of the project. The Wikimap was used to gather information from city residents and others interested in the plan about the conditions of walking and bicycling routes within the city and specific areas in need of improvement. The public also provided comments on the draft infrastructure recommendations, which were posted to the Wikimap in the summer of 2014.

178 individual users submitted 342 comments on the online Wikimap.

There were two public meetings for the Bicycle and Pedestrian Plan, both held at the Portsmouth Library. Each meeting included a presentation and interactive stations where attendees provided comments on proposed recommendations.

In addition to the public meetings, the project team attended a Portsmouth Senior Services Senior Luncheon, a meeting of the Portsmouth Housing Authority's residents advisory group, and a meeting with the citywide Neighborhood Committee.

Data Collection and Analysis

A field assessment was conducted on streets identified with input from the Steering and Advisory Committees and participants of the first public meeting as priorities for improvement. The assessment included documenting existing road dimensions and characteristics and a first cut at identifying opportunities to improve the infrastructure for walking and bicycling. The opportunities, assets, and constraints analysis [see Appendix I] details the existing conditions on a street by street basis. This analysis provided a basis for the infrastructure recommendations presented in Chapter 3.

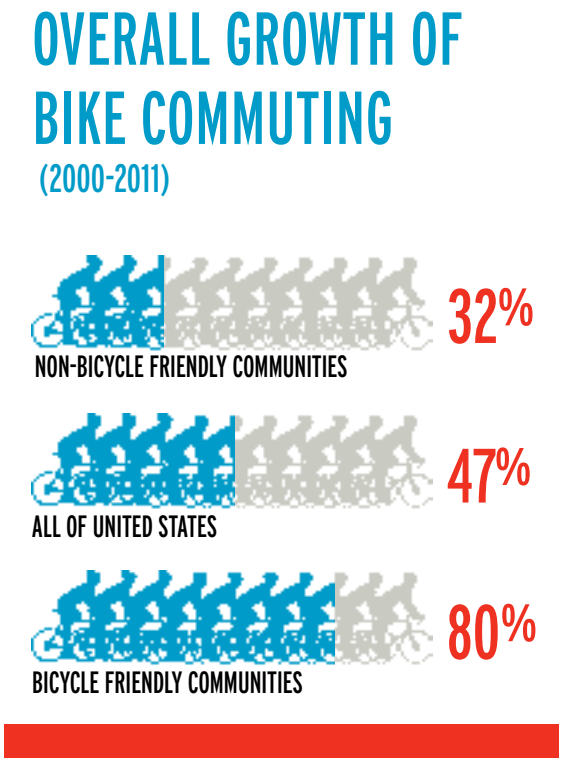
Policy and programming recommendations, presented in Chapter 4, were developed based on a review of current practices and policies in Portsmouth and suggestions from the public. These also draw on successful best practices for fostering walk-friendly and bike-friendly communities.

Benefits of Walking and Bicycling

Walking and bicycling are increasing in popularity across the country, and communities are recognizing the importance of encouraging these modes as a component of livability.

Neighborhoods and cities conducive to walking and bicycling are growing in appeal. According to a 2013 National Association of Realtors survey, 60 percent of adults favor walkable mixed-use neighborhoods, and almost two-thirds of adults between 18 and 35 report a desire to drive less.

The growing interest in bicycling is prevalent across all age groups. Although the millennial generation is the generation most often associated with bicycling, bicycling rates have increased among older adults. As shown below, between 2001 and 2009 the share of bike trips made by people between the ages of 40 and 64 increased from 10 percent to 21 percent.[2]



[2]The Growth of Bike Commuting. The League of American Bicyclists. Accessed PDF online, 2014. http://bikeleague.org/sites/default/files/League-info-BikeCommuting.pdf

The benefits of walking and bicycling are numerous.

Supporting walking and bicycling will:

1. Provide affordable travel options.
The national average annual cost for owning and driving a car is approximately $8,000, a significant financial burden on many families and individuals.

2. Encourage healthy lifestyles.
The American Medical Association (AMA) and Center for Disease Control (CDC) both recommend adults engage in 150 minutes of physical activity per week (or about 20 minutes a day). This can be accomplished by walking or bicycling for all or part of the trip to work or school.

3. Provide options for people unable to drive.
The ability to walk for transportation is crucial for people who cannot drive a motor vehicle due to age, ability, economic, or other constraints. Providing safe transportation facilities allows everyone to independently reach destinations such as schools, shopping, and services.

4. Help increase safety for all road users.
According to a report by the Alliance for Biking and Walking, cities with a higher percentage of commuters who walk or bike to work have corresponding lower road-related fatality rates.

5. Reduce traffic congestion.
Shifting trips from driving to walking or bicycling can reduce the number of motor vehicles in the road and related traffic congestion.

6. Reduce pollution and negative environmental impacts.
Reducing pollution from vehicles can improve the air quality locally and reduce impacts from greenhouse gas emissions globally.

7. Support economic development.
Cities such as New York and San Francisco have seen increased retail activity after the installation of bike lanes. Walkable neighborhoods have been linked to higher home prices than auto-dependent neighborhoods.

Existing Trends and Conditions

Walking and bicycling conditions vary dramatically from one part of Portsmouth to another. The Existing Condition analysis maps, included in the following pages and summarized below, illustrate the differences in walking and bicycling conditions in different parts of the city. The maps combine information about the existing walking and bicycling network and input from the public about daily and other frequent destinations. Walk-sheds and bike-sheds (areas that are within walking or biking distance of a particular destination) are overlaid on this information to illustrate areas where there is a potential demand for bicycling and walking. The maps also show public transit access points and connections, the existing pedestrian and bike network, and roadway character.

Transit Access and Walkability

The area bounded by the Route 1 Bypass, Sagamore Creek, and Piscataqua River, including Downtown and the West End, has the best walking conditions and a concentration of amenities. The existing sidewalk network here makes walking between destinations safe and convenient. Auto-oriented areas such as Lafayette Road south of the Route 1 Bypass and Pease International Tradeport are much more difficult to travel to by foot due to greater distances and fewer amenities. The lack of consistent sidewalks here and barriers such as the Route 1 Bypass, the Spaulding Turnpike, Interstate 95, and Sagamore Creek make walking between these areas of the city difficult and undesirable. There are transit access points in proximity to many (but not all) major origins and destinations. Several transit stops are also in proximity to difficult intersections which may deter potential riders or limit access, especially for people with mobility challenges.

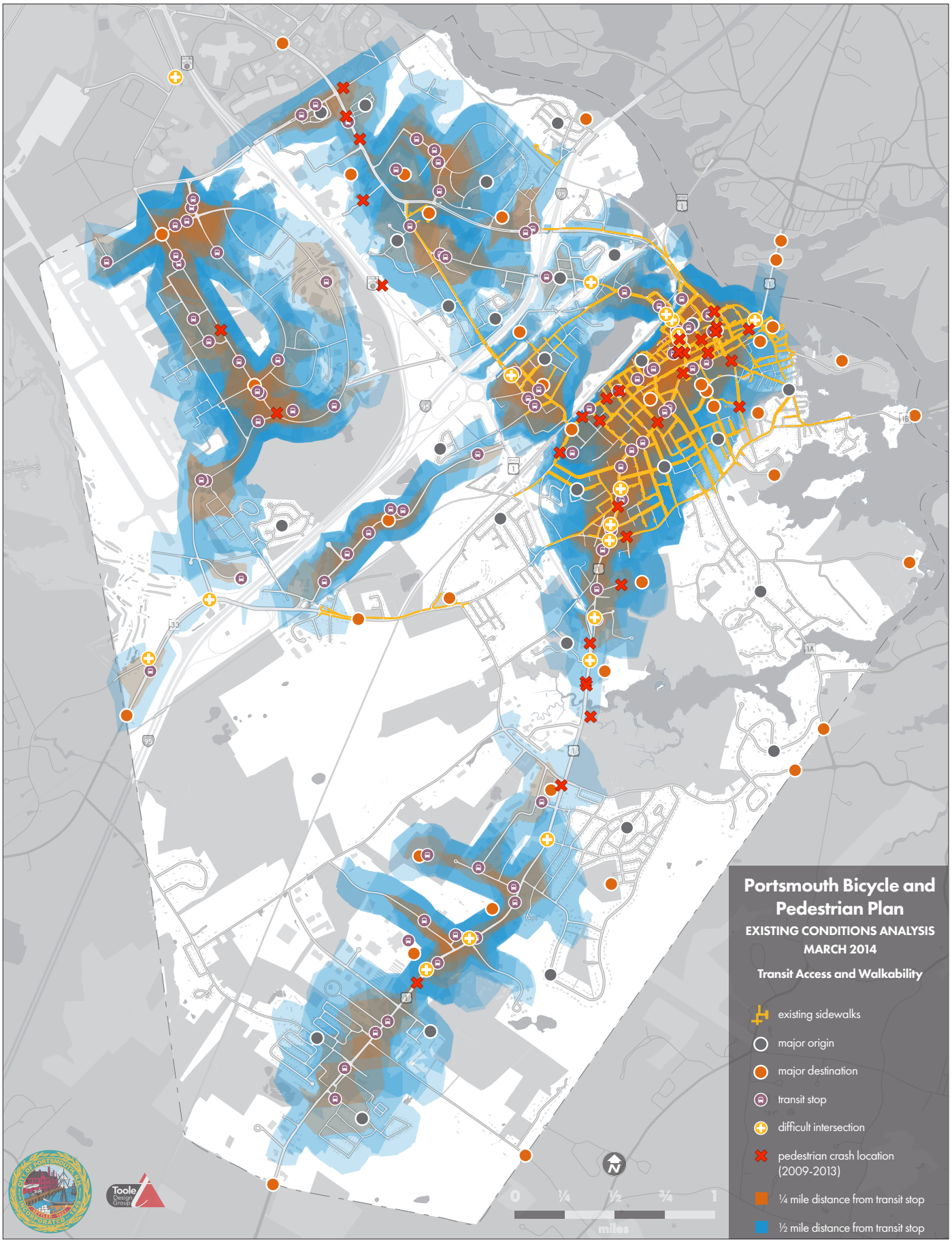
Existing Bike Network Connectivity and Roadway Character

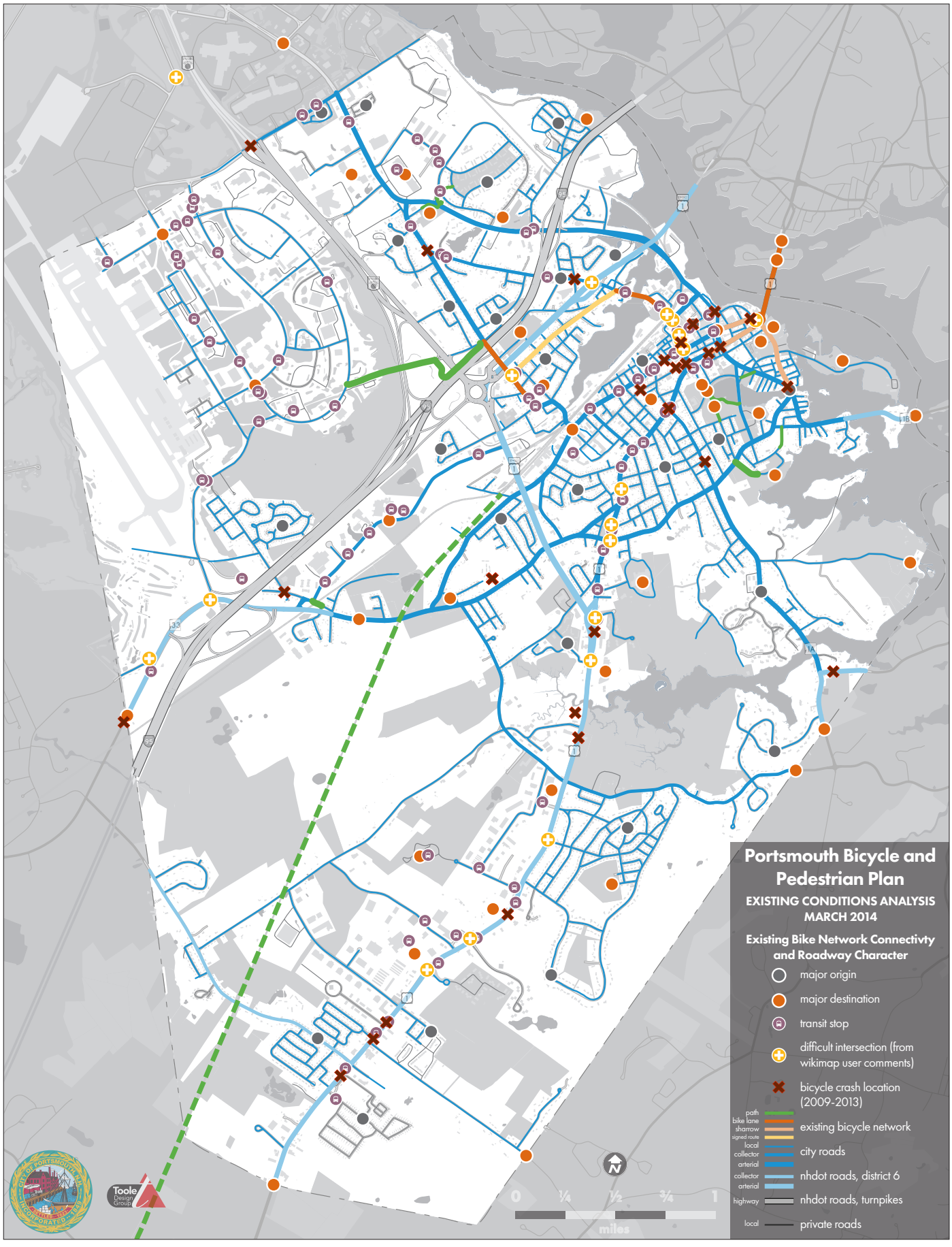
Portsmouth's streets and paths vary in their appeal to bicyclists. Local neighborhood streets with low vehicle volumes and speeds often provide comfortable places for bicycling but do not form a connected network. Larger arterial streets provide greater connectivity between neighborhoods, but higher traffic volumes and speeds frequently make them less desirable as bicycle routes. Bike lanes on the Memorial Bridge, Woodbury Avenue, and Maplewood Avenue north of Hanover Street help to make bicycling more comfortable on these streets with higher traffic volumes. Paths such as the future Hampton Branch Rail Trail and Pease Multi-use Path provide critical bicycle connectivity where it otherwise would not exist. Similarly, large, busy intersections can be a deterrent to bicycling. Wikimap user comments at intersections on Lafayette Road, Middle Street, and Maplewood Avenue south of Hanover illustrate that these intersections are more difficult and stressful for bicyclists. Bicycle and pedestrian crashes occur primarily on roads with higher vehicle volumes and speeds, such as Lafayette Road, , and on streets in the downtown area, which likely have higher pedestrian and bicyclist volumes. Although crash rates were not calculated, streets with high pedestrian and bicyclist volumes often have lower crash rates, and pedestrians and bicyclists may have a lower chance of a collision in these areas, despite a high number of crashes.

Potential Bike/Walk Demand

The potential demand for bicycling and walking in an area can be gauged by looking at two factors: the number of places to walk and bike to and the distances between those places). By this logic, a greater number of origins and destinations for bicycling and walking trips should generate more trips. Likewise, as the distance between these places increases, the likelihood that a trip will take place by bicycling or walking generally decreases. The higher density of destinations in Downtown, the South End, and the West End indicate that these areas have the greatest potential to generate walking and bicycling trips. These include daily uses like schools, shopping, community centers, and jobs, as well as occasional uses like museums, restaurants, and parks.

Neighborhoods around Elwyn Road, Woodbury Avenue, Market Street, Maplewood Avenue, and Peverly Hill Road also show a strong potential demand for bicycling and walking for general daily uses. The lowest potential demand, in the Pease International Tradeport and the southern end of Lafayette Road, does not mean that users in those areas will not want to walk and bike, but merely that they may be less likely or able to do so given relatively long distances and fewer destinations. Residents in these areas are more likely to depend more on driving or on having reliable, accessible transit service to connect them to destinations throughout the city.


Portsmouth Bicycle and Pedestrian Plan
EXISTING CONDITIONS ANALYSIS
MARCH 2014
Transit Access and Walkability
existing sidewalks
major origin
major destination
transit stop
difficult intersection
pedestrian crash location (2009-2013)
¼ mile distance from transit stop
½ mile distance from transit stop
0
¼
½
¾
1
miles
Toole Design Group


Portsmouth Bicycle and Pedestrian Plan
EXISTING CONDITIONS ANALYSIS
MARCH 2014
Existing Bike Network Connectivty and Roadway Character
major origin
major destination
transit stop
difficult intersection (from wikimap user comments)
bicycle crash location (2009-2013)
path
bike lane
sharrow
signed route
local
collector
arterial
existing bicycle network
city roads
collector
arterial
nhdot roads, district 6
highway
nhdot roads, turnpikes
local
private roads
0
¼
½
¾
1
miles
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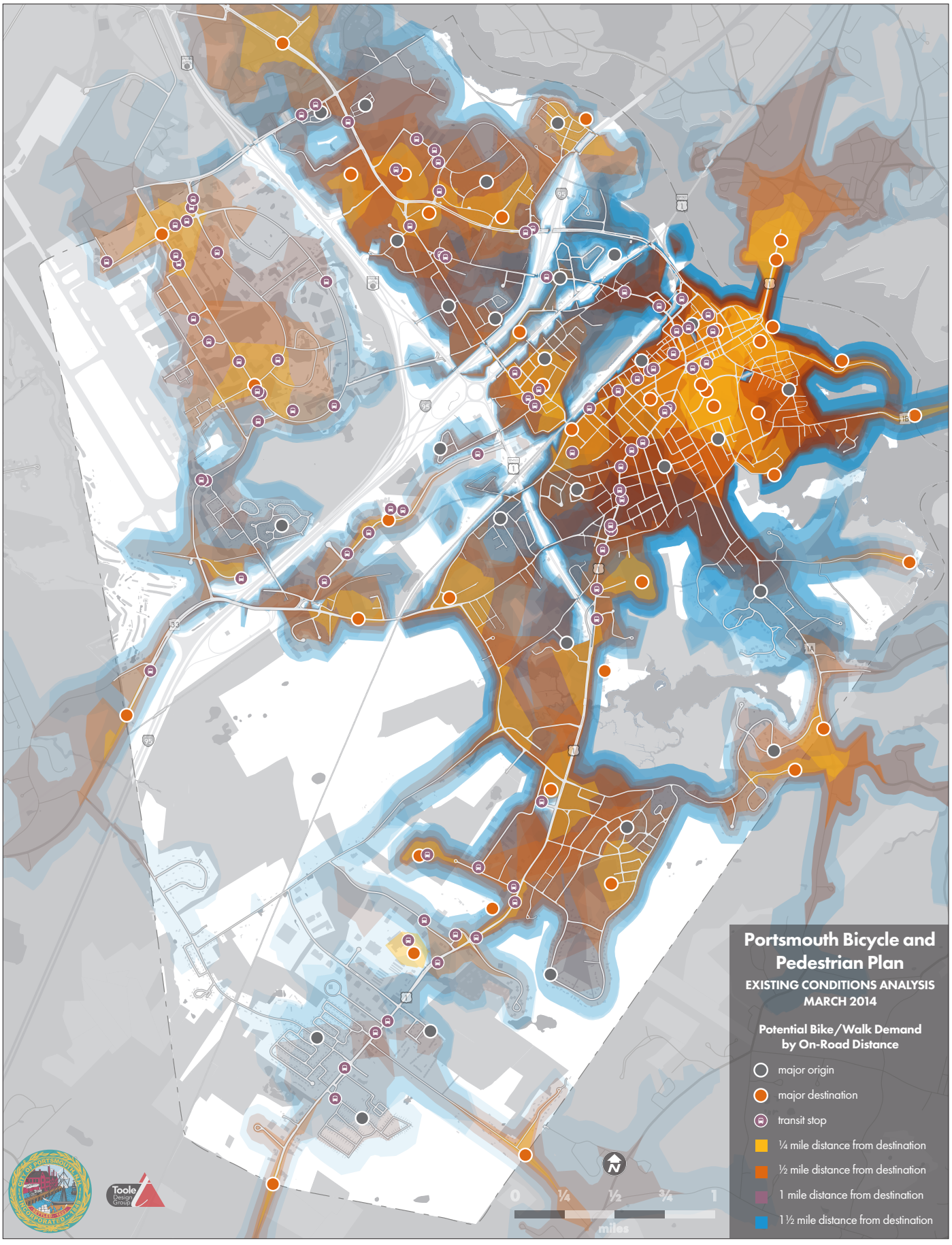

Portsmouth Bicycle and Pedestrian Plan
EXISTING CONDITIONS ANALYSIS
MARCH 2014
Potential Bike/Walk Demand by On-Road Distance
major origin
major destination
transit stop
¼ mile distance from destination
½ mile distance from destination
1 mile distance from destination
1½ mile distance from destination
0
¼
½
¾
1
miles
N
Toole Design Group

Daily Travel Habits

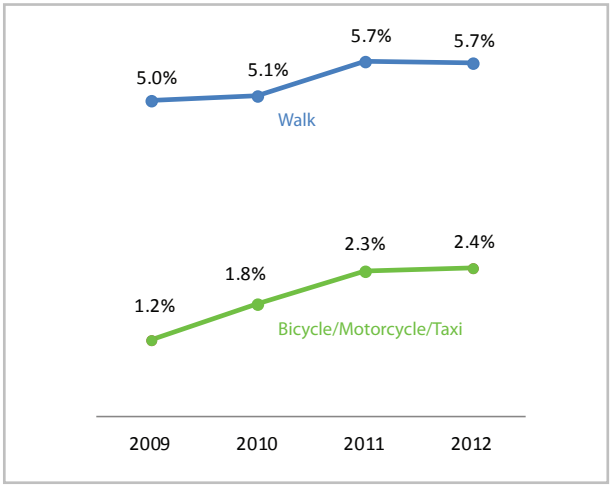
Portsmouth has a resident population of approximately 21,000 people. During the daytime and weekends that number more than doubles due to an influx of visitors and employees.

Portsmouth is a major regional employment center. Large employers include Portsmouth Regional Hospital, Liberty Mutual, and the U.S. Government. The Pease International Tradeport, located in the northwest of the city, has a high concentration of large and medium-size employers. Additionally, Portsmouth's historic downtown has a very active dining and retail sector.

Based on the US Census American Community Survey (ACS), Portsmouth residents currently walk and bike to work at a higher rate than the national average. Nationally, approximately 2.8 percent of people commute to work by walking, compared to over 5 percent in Portsmouth. National figures for bicycle/motorcycle/taxi commutes have been approximately 1.8 percent each year between 2009 and 2012, compared to a rise from 1.2 percent to 2.4 percent in Portsmouth. It is important to note that the ACS estimates commuting habits of residents, but not employees of Portsmouth businesses. As Portsmouth has a much higher daytime population due to its function as a regional employment center, the city should also consider walking and bicycling connections to bordering communities and public transit.

There are four elementary schools and one high school in Portsmouth. The high school draws approximately one-third of its students from three neighboring municipalities. With approximately 2,000 elementary students in Portsmouth, investment in bicycling and walking infrastructure and programs has the potential to create a significant mode shift during school arrival and dismissal periods. Shifting to walking and bicycling at these times can reduce traffic congestion around schools and provide opportunities for physical activity for students and families.

Nationally, about 40% of total trips are shorter than two miles (a 30 minute walk or 10 minute bicycle ride). Similarly, in Portsmouth many non-commuting trips, such as running errands, visiting friends and family, entertainment, or recreation are within 1 to 1.5 miles of where people live.



Walking / Bicycling commutes have risen in Portsmouth between 2009 and 2012. Source: US Census: American Community Survey 5-Year Estimates.

In some areas, bus stops also fall within this 1.5 mile walk- or bike- shed. Availability of transit can extend the distance of non-vehicular trips when combined with walking and bicycling.

The City conducted bicycle and pedestrian counts on June 25th and 28th 2014 at 10 locations in sections of the City with the assistance of volunteers. Preliminary data shows that the highest concentrations of bicyclists and pedestrians are located at the intersections of Maplewood Ave and Middle St, the Memorial Bridge, and at South St and Marcy St. See the tables and maps in Appendix 5 for more information. The City plans to conduct additional bicycle and pedestrian counts in other areas of the City. These counts alone are not an indicator of demand.

COAST transit buses are equipped with front racks to transport bicycles.

Public Perception and Experience

During the development of the plan, Portsmouth residents expressed support for an expanded bicycle network and for improvements to the pedestrian realm. Public input also echoed issues documented in the existing condition maps. The following section lists common themes heard from the public.

WALKING

1. High traffic speeds make it uncomfortable to walk in portions of Portsmouth.

Speed is a threat to pedestrian safety. High traffic speeds can cause stress for pedestrians walking along a street. Pedestrians have an 85% chance of death or serious injury when hit by a vehicle traveling at 40 mph, as opposed to a 5% chance when hit by a vehicle travelling at 20 mph.

Many of Portsmouth's streets have a design speed* much higher than the posted speed limit. Motorists adjust their driving speeds to match the design speed of the road. For example, a 2012 speed study of Peverly Hill Road showed an average speed of 32 mph and an 85th percentile speed** of 38 mph. The posted speed limit on this road is 25 mph. A recent study of Market Street between Interstate 95 and Russell Street revealed the 85th percentile speed as 49 mph, while the posted speed limit is 35 mph. Topography or curving roads with limited visibility can exacerbate speeding problems.

*According to the American Association of State Highway and Transportation Officials (AASHTO), design speed is a selected speed used to determine the design of various geometric features of the roadway.

**The speed at or below which 85 percent of the motorists travel.

2. Some intersections are uncomfortable for pedestrians to cross.

Intersections can be a barrier for pedestrians if they lack crosswalk markings, sufficient time for crossings or pedestrian signal, or are excessively wide.

3. Downtown Portsmouth is perceived as the only walkable neighborhood.

Many people felt that walking was something that was only done "downtown." Downtown Portsmouth is a dense historic and commercial district which has a Walk Score® of 86*, compared to a city average score of 45. Despite some maintenance concerns and some hazards associated with brick sidewalks, Portsmouth's downtown is a very walkable area. Many of Portsmouth's other neighborhoods lack the density, concentrations of destinations and a mix of land uses, streetscaping, sidewalks, and crossings needed to be walk-friendly. While other neighborhoods may be appealing to walk for recreational purposes, they may lack connections to destinations.

4. It is challenging to walk in the winter due to weather.

Southern New Hampshire receives an average of 23.34 inches of snow annually. Though the City of Portsmouth conducts regular snow clearance on sidewalks after snow events, residual snow on plowed sidewalks, at crossings, and at transit stops make it difficult to walk, especially for the City's more vulnerable residents. Vulnerable users include children, seniors, or people with disabilities who may be slower or have mobility or sensory limitations.

*100 is the best score

Bicycling

1. High traffic speeds make it uncomfortable to bike in some places in Portsmouth.

As with pedestrians, high traffic speeds can make bicycling uncomfortable. Most people prefer bicycling on low-speed streets or on separated bicycle facilities, such as bike paths, when speeds are higher. Many roads that serve as major connections between neighborhoods and important destinations have higher traffic speeds and volumes.

Although bicyclists may divert their routes to access a lower-stress road, significant diversions become a frustration, especially for regular riders. Convenient networks should take into account topography, connectivity, and momentum for bicyclists.

2. Additional bike amenities, such as more parking, and public maintenance stations are desired throughout Portsmouth.

The City of Portsmouth has installed bicycle parking which has been popular with bicyclists. There is a demand for additional bicycle parking, public maintenance stations, and bicycle wayfinding. These amenities can increase the comfort and convenience of the entire bicycle trip—from accessing the road and finding your way, to fixing a flat and locating a parking spot.

3. Bicycle safety and maintenance education are desired, especially for children.

Portsmouth residents have expressed an interest in bicycle education programs focused on safe riding habits, facility types, and maintenance. Bicyclists and non-bicyclists alike stressed the importance of bicycle education for children and motor vehicle drivers.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SPEED LIMIT 15
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Chapter Two
VISION, GOALS, AND OBJECTIVES

Walking and Bicycling in Portsmouth —The Vision

Portsmouth residents, workers, and visitors will view walking and bicycling as comfortable and convenient ways to get around the city. Walking and bicycling will be a part of Portsmouth's culture, making the city a healthy and vibrant place to live.

The vision for the Bicycle and Pedestrian Plan captures and articulates Portsmouth's commitment to increasing walking and bicycling. This commitment is evident in the policies and plans that have been created since the adoption of the City's 2005 Master Plan, which called for "safe and convenient bicycle and pedestrian circulation throughout the city." Highlights include:

- Bicycle lanes and shared lane markings on the newly reconstructed Memorial Bridge and other streets downtown
- The Market Street Corridor and Islington Corridor studies for pedestrian and streetscape improvements
- Safe Routes to School Action Plan that include programming and physical improvements around schools to encourage walking and bicycling
- Wayfinding plan for the city that includes walking and bicycling routes
- Complete Streets, Walk-Friendly and Bike-Friendly Community policies
- Portsmouth Listens Report

These policies and projects are summarized in Appendix 2.

The vision encapsulates the driving force behind of all of these efforts to improve walking and bicycling in Portsmouth. At the broadest level, the vision guides each of the recommendations in the Bicycle and Pedestrian Plan. Goals and objectives on the following pages expand on the vision. The goals and objectives provide a level of specificity that shape the recommendations and provide a framework for prioritizing the Plan's recommendations.

Goals and Objectives

Goal 1: Improve the safety of walking and bicycling in Portsmouth.
Objectives
Improve safety for pedestrians along streets and sidewalks, at intersections, street crossings, and transit stops throughout Portsmouth.
Improve safety for bicyclists on streets and intersections throughout Portsmouth.
Reduce unsafe motor vehicle driving behavior in Portsmouth.
Educate city staff, consultants, and engineering professionals on best practices for pedestrian and bicycle facility design.

Goal 2: Increase the number of walking and bicycling trips in Portsmouth.
Objectives
Update and maintain streets, sidewalks, and paths to offer continuous and comfortable connections between residences, employment centers, services, schools, transit stops, and other destinations across the city.
Create and maintain a bicycle network that provides comfortable and convenient connections to residences, employment centers, services, schools, transit stops, and other destinations across the city.
Make major arterials throughout Portsmouth attractive for walking by providing landscaping and other amenities and by encouraging pedestrian-oriented land uses where appropriate.
Provide safe and convenient routes for Portsmouth students to walk and bike to school.

Goal 3: Advance Portsmouth's reputation as a city where walking and bicycling are a visible part of everyday life.
Objectives
Establish best practices, standards, and programs that support walking and bicycling for people of all ages and abilities.
Engage the business community in programs to encourage walking and bicycling for commuting, shopping, and recreation purposes.
Provide wayfinding and amenities that cater to pedestrians and bicyclists.

Chapter Three
INFRASTRUCTURE RECOMMENDATIONS

INTRODUCTION

Portsmouth's proposed bicycle and pedestrian network vision combines the existing network with new facilities that improve connectivity, comfort, and safety for pedestrians and bicyclists. The recommended improvements are illustrated in maps provided later in this chapter. These maps are divided into pedestrian and bicycle improvements that are numerically keyed to a reference table that includes a description of the project and its purpose.

The recommended infrastructure projects draw on state of the practice facility designs selected for their applicability to conditions and road types found in Portsmouth. The Facility Toolkit (p 29) provides a reference guide for the facility types listed in the maps.

There are over 200 individual projects within the proposed network. It is recognized that not all proposed projects will be implemented immediately or even within the next five years. The final section of this chapter includes a prioritization methodology for the recommendations which considers the value of each project relative to the Bicycle and Pedestrian Plan goals. A priority of high, medium, or low is based on these criteria. Chapter 4 addresses non-infrastructure projects, policies, and programs. Chapter 5 outlines the decision-making process and steps to implement the recommendations in Chapters 3 and 4.

The Network

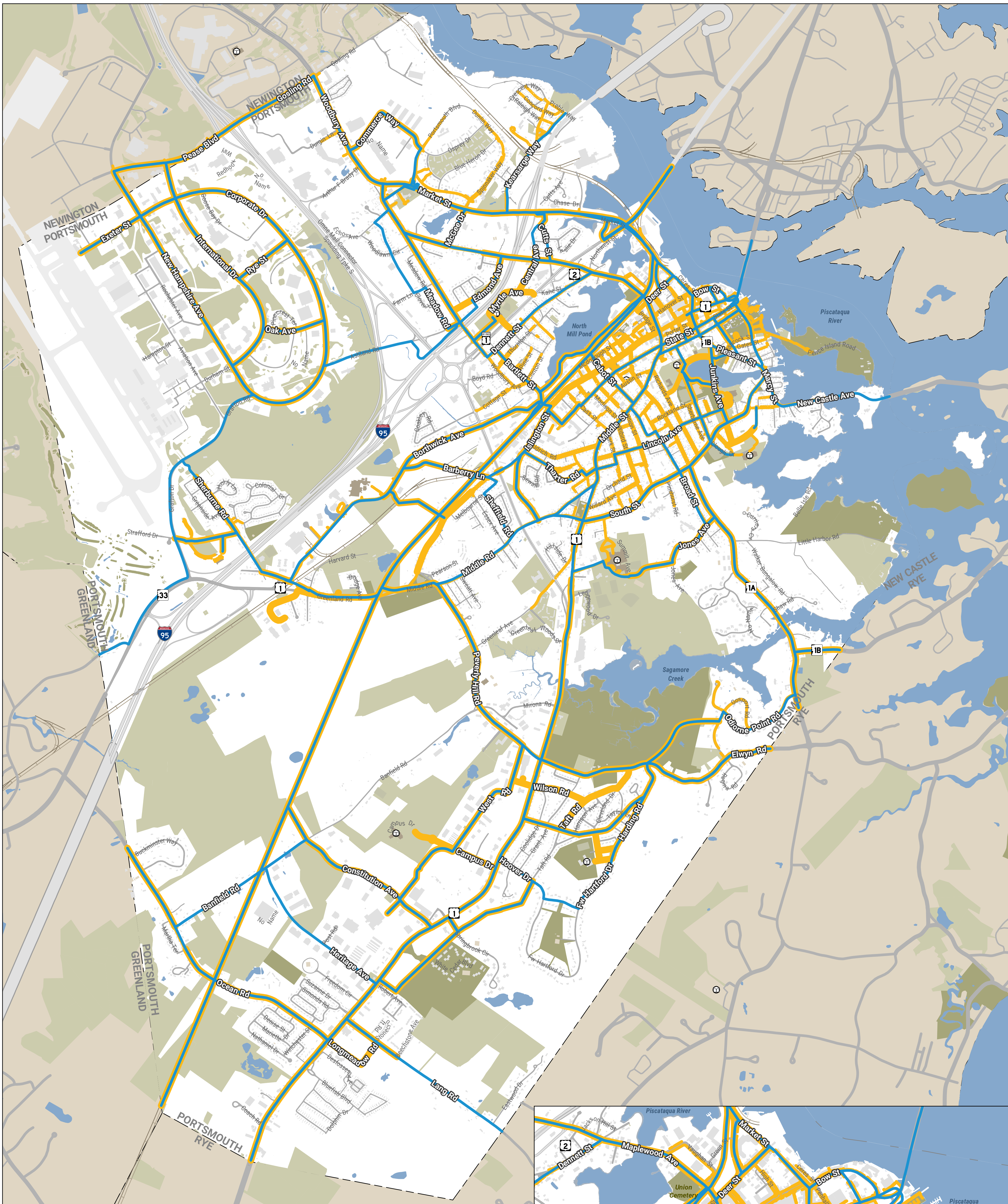
The proposed bicycle and pedestrian network establishes walking and bicycling connections to transit, schools, employment, retail, basic services, and other destinations. Drawing from the plan's vision and goals, the physical network will be dsigned to improve safety, connectivity, and equity.

Improving safety:
Addressing safety concerns on individual streets as identified in crash data, public input, and through field evaluation.

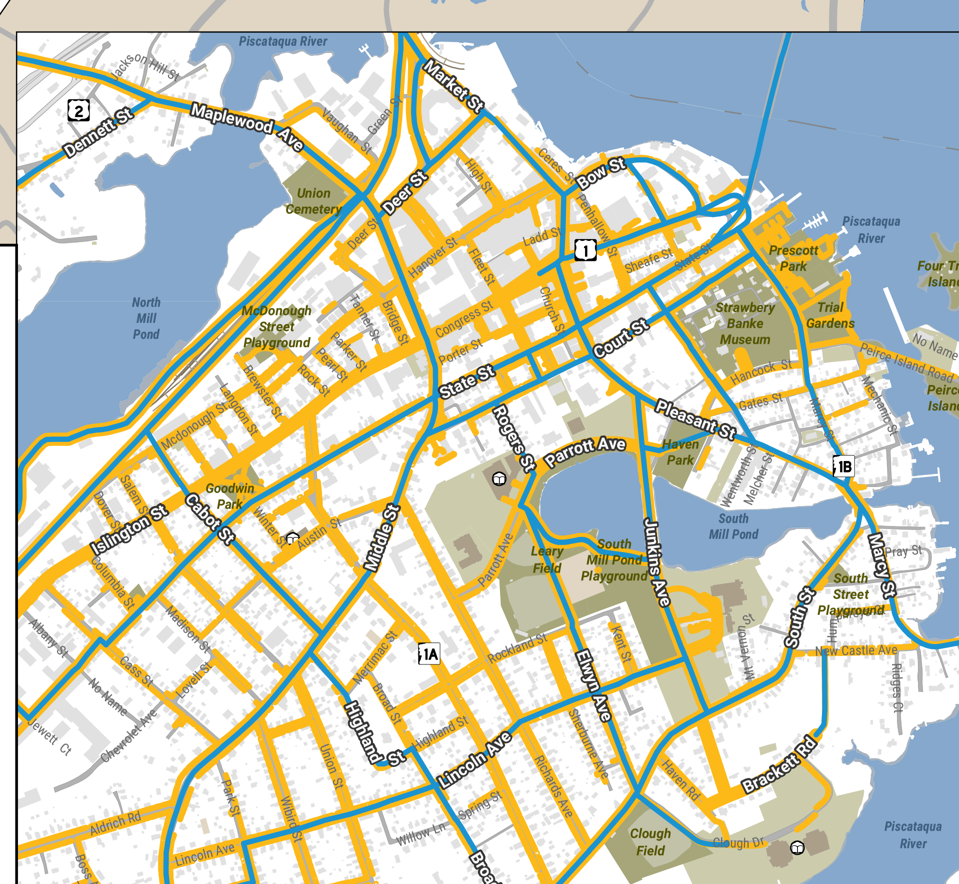
Enhancing connectivity to increase the number of walking and bicycling trips:
Building an interconnected network that connects people to destinations.

Achieving equity so that walking and bicycling can be possible for everyone, everyday:
Giving special consideration to improving the mobility of vulnerable or limited-choice populations. Vulnerable populations encompass the young, old, and those with sensory or mobility impairments. Residents who rely on transit, walking, or bicycling because they do not have access to a personal car are considered to be limited-choice.

The streets shown in this network include streets and paths that are currently good walking and bicycling routes, streets identified as desired routes by public input, and streets or future paths that can serve as important connections.



NEWINGTON
PORTSMOUTH
PORTSMOUTH
GREENLAND
PORTSMOUTH
RYE
NEW CASTLE
RYE
Pease Blvd
Exeter St
New Hampshire Ave
International Dr
Corporate Dr
Rye St
Oak Ave
Gosling Rd
Woodbury Ave
Commerce Way
Market St
McGee Dr
Kearsarge Way
Edmond Ave
Myrtle Ave
Central Ave
Cutts St
Meadow Rd
Dennett St
Bartlett St
Borthwick Ave
Barberry Ln
Islington St
Sherburne Rd
Sheffield Rd
Middle Rd
Peverly Hill Rd
Thaxter Rd
South St
Lincoln Ave
Broad St
Jones Ave
Middle St
Cabot St
Deer St
Bow St
State St
Pleasant St
Junkins Ave
Marcy St
New Castle Ave
Sagamore Creek
Odiorne Point Rd
Elwyn Rd
Wilson Rd
Taft Rd
Harding Rd
West Rd
Campus Dr
Hoover Dr
Fw Hartford Dr
Constitution Ave
Banfield Rd
Heritage Ave
Ocean Rd
Longmeadow Rd
Lang Rd
Piscataqua River
North Mill Pond



Piscataqua River
Market St
Maplewood Ave
Dennett St
Union Cemetery
Deer St
Bow St
Prescott Park
Four Tree Island
Strawbery Banke Museum
Trial Gardens
McDonough Street Playground
North Mill Pond
Court St
State St
Pleasant St
Peirce Island
Goodwin Park
Islington St
Cabot St
Middle St
Rogers St
Parrott Ave
Haven Park
Leary Field
South Mill Pond Playground
South Mill Pond
Junkins Ave
Marcy St
South Street Playground
New Castle Ave
Highland St
Lincoln Ave
Elwyn Ave
South St
Brackett Rd
Clough Field
Broad St

City of Portsmouth
Bicycle and Pedestrian Master Plan

BICYCLE AND PEDESTRIAN
NETWORK PLAN

August 2014

Bicycle Network

Pedestrian Network

0 0.125 0.25 0.5 0.75 1
Miles

Toole Design Group

Facility Toolkit

Recommendations illustrated on the bicycle and pedestrian maps which follow refer to the facilities described in this toolkit.

The toolkit includes a description of the type of facility and its purpose, the advantages and disadvantages of installing it, and the typical methods and cost of installing it.

The improvements are categorized as corridor and spot improvements. Corridor improvements apply to trails or city blocks. All of the corridor improvements in the toolkit appear on the recommendation maps later in this chapter.

Spot improvements include improvements to an intersection, crossing, or other specific location along a block or trail. Spot improvements should be considered for all related facilities. Although some spot improvements listed in the toolkit were not recommended at specific locations in Portsmouth, these are included as there may be opportunities to implement them in the future. These are marked with an asterisk in the list below.

All designs should adhere to the guidelines from the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), the Public Rights of Way Access Guide (PROWAG), as well as any other standards such as AASHTO's "A Policy on Geometric Design of Highways and Streets," the NH DOT design guidelines, and the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide, as appropriate.

Corridor Improvements

- Shared-Use Path
- Sidepath
- Shared Street
- Pedestrian Street
- Sidewalk
- Cycle Track
- Bike Lane
- Buffered Bike Lane
- Climbing Lane
- Contraflow Bike Lane
- Shared-Lane Marking
- Bike Boulevard
- Signed Route

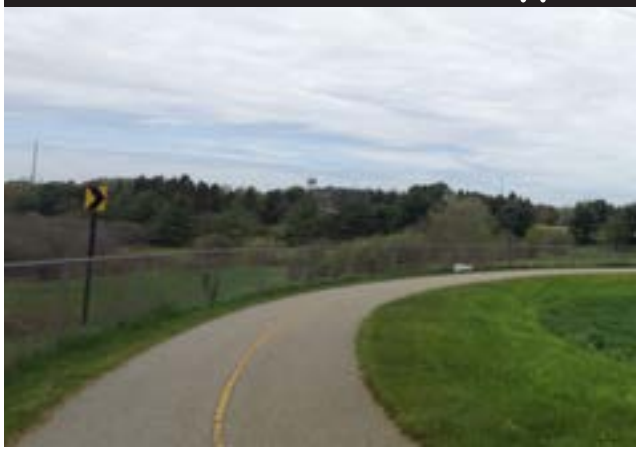
Spot Improvements

- Intersection Geometry
- Trailhead
- Crossing
- Curb Extension
- Raised Intersection
- Pedestrian Crossing Island
- Pedestrian-Scale Lighting
- Gate Access
- Traffic Signal or Beacon
- Bike Signal
- Bike Lane Intersection Striping
- Traffic Signal Timing*
- Leading Pedestrian Interval*
- Painted Intersection*
- Parklet*
- Bike Box*
- Two-Stage Queue Box*
- Bike Detection*
- Bike Parking*
- Bike Maintenance Station*

**no specific recommendation included in this plan*

CORRIDOR IMPROVEMENTS

Shared-Use Path



Description

- Two-way path open to bicycles, pedestrians, and most other non-motorized uses
- Path should be ADA-compliant
- **Typical Dimensions:** 10-14 ft. wide depending on expected user volume plus 2 ft. wide clearance on either side

Application

- Often installed along active or abandoned rail corridors, utility easements, or along streams, rivers, or other linear features
- Provides long-distance connections as well as short-cuts between areas without bicycle or pedestrian infrastructure

Advantages/Disadvantages

- Provides low-stress bicycle and pedestrian connection
- Right of way (ROW) easement or acquisition may be required
- Separate maintenance program may be required

Action Required

- Construction
- Estimated cost: $1.2M per mile

Sidepath

Description

- Two-way path, adjacent to a roadway, open to bicycles, pedestrians, and most other non-motorized uses
- Path should be ADA-compliant
- **Typical Dimensions:** 10-14 ft. wide depending on expected user volume plus 5 ft. wide buffer from roadway

Application

- Roads with available ROW on one or both sides
- Roads with few driveways or cross streets

Advantages/Disadvantages

- Provides low-stress bicycle and pedestrian connection
- ROW easement or acquisition may be required
- Path may be easier to maintain and clear snow than a standard sidewalk

Action Required

- Construction
- Estimated cost: $640K-1.2M per mile

Shared Street

Description

- A shared space for motorists, pedestrians, and bicyclists
- Typically, the road surface is at the same level as the sidewalk surface to create a continuous pedestrian space
- Travel zones can be delineated by varying materials or pavers, installing bollards (sometimes removable), or plantings
- Motorists and bicyclists welcomed as 'guests' in a pedestrian-dominated space

Application

- Streets with high pedestrian volumes
- Narrow streets where sidewalks do not accommodate pedestrians sufficiently or where ADA-compliance is not otherwise possible
- Streets where slow vehicular speeds are preferred

Advantages/Disadvantages

- Provides flexible pedestrian space
- Enlivens street-life, enhances retail environments
- Consideration of commercial loading activity for adjacent buildings may be required

Action Required

- Construction or street closure for temporary installation
- Estimated cost: $2M per mile of construction, $140K per mile of temporary closure

Pedestrian Street

Description

- A street closed to vehicular traffic, used primarily by pedestrians
- Other non-motorized modes are often allowed (such as bicycles)

Application

- Streets with very high pedestrian demand
- Often shopping streets with plazas for outdoor markets or events
- Often located near streets with alternate routes for vehicles

Advantages/Disadvantages

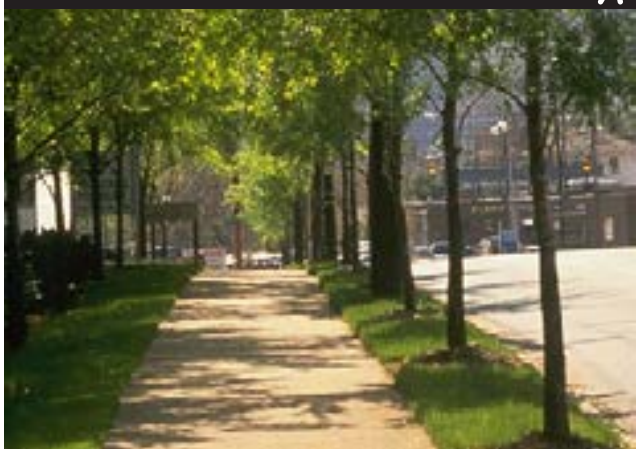
- Promotes a relaxed environment for pedestrians
- Allows adjacent businesses to use street space for cafes or retail creating a lively atmosphere
- Provides flexible space for events
- Reduces vehicular access from adjacent streets
- Consideration of emergency vehicle access necessary
- Consideration of commercial loading activity for adjacent buildings may be required

Action Required

- Construction or street closure for temporary installation
- Estimated cost: $2M per mile of construction, $140K per mile of temporary closure

CORRIDOR IMPROVEMENTS

Sidewalk



Description

- Typically concrete pathway adjacent to roadways for pedestrian travel
- Must meet minimum dimensions and smoothness for ADA-compliance
- May have decorative paving or plantings
- Should be wider where high pedestrian volumes are present or desired
- **Typical Dimensions:** Min. 4 ft. wide, 5-10+ ft. in high user volume areas; min. 2 ft. wide buffer from roadway preferred

Application

- Roads where pedestrians may be present at any time
- Routes that connect to public destinations including transit

Advantages/Disadvantages

- Separates pedestrians from vehicular travel
- Facilitates pedestrian travel, particularly for persons with disabilities
- Right-of-way easement or acquisition may be required
- Maintenance required to ensure year-round accessibility

Action Required

- Construction
- Estimated cost: $410K-$1.1M per mile to add, widen, or construct concrete sidewalk; $670K-1.9M to add, widen, or construct brick sidewalk

Cycle Track

Description

- One- or two-way bicycle facility with vertical separation from motor vehicle traffic
- Vertical separation may be provided by parked motor vehicles, flexible bollards, plantings,or curbs
- May be located on a roadway or raised to, or just below, sidewalk level
- **Typical Dimensions:** 4-5 ft. wide travel lane plus minimum 3 ft. buffer from roadway

Application

- Along roadways with high vehicular volumes, speeds, or complex traffic patterns
- Along primary roadway corridors providing access to high-demand destinations where high bicycle volumes are present or desired

Advantages/Disadvantages

- Provides comfort for bicyclists and motorists
- Specialized intersection treatments may be required to accommodate bicyclists
- Separation of bicyclists and pedestrians may require specialized design treatments
- Potential parking restrictions due to sight lines

Action Required

- Construction or signs, markings, and signals depending on level of implementation
- Estimated cost: $127K-153K per mile for retrofit; $710K per mile for construction

Bike Lane

Description

- An exclusive lane for bicyclists designated with pavement markings and signage
- Located adjacent to motor vehicle travel lanes and flows in the same direction as motor vehicle traffic
- **Typical Dimensions:** Min. 5 feet. 6 foot min. preferred adjacent to parked vehicles; 4 ft. acceptable adjacent to curb in low speed environments

Application

- Used on medium to low volume streets with traffic speeds of 40 mph or less

Advantages/Disadvantages

- Provides separate travel lane for bicyclists
- Mixing zones may be required at intersections or bus stops
- Enforcement often required to keep motorists from parking or stopping in bike lanes

Action Required

- Signs and markings, construction
- Estimated cost: $20 - $46K per mile retrofit (type varies); $590K per mile to reconstruct and widen roadway to accommodate bike lanes

Buffered Bike Lane

Description

- A bicycle lane with additional lateral separation from other roadway users
- Buffer may be located between the bike lane and motor vehicle travel lane, parking, or both
- **Typical Dimensions:** Min. 6 ft. Includes 2 ft. buffer and 4 ft. lane

Application

- Installed adjacent to high speed or high volume traffic
- Installed adjacent to high turnover parking

Advantages/Disadvantages

- Increases operating space and comfort for bicyclists
- Provides passing space for bicyclists
- Requires more space than standard bike lanes
- Requires installation and maintenance of more pavement markings than a standard bike lane
- Enforcement often required to keep motorists from parking or stopping in bike lanes

Action Required

- Signs and markings
- Estimated cost: $55K - 61K per mile (type varies)

CORRIDOR IMPROVEMENTS

Climbing Lane

Description

- Bike lane located only in the uphill direction of a roadway
- Shared-lane markings used on opposite side where direction of travel is downhill
- **Typical Dimensions:** Min. 6 ft. wide bicycle lane adjacent to parked vehicles; 5 ft. acceptable adjacent to curb; shared-lane markings on downhill side, min. 11 ft. from curb with parking, min. 4 ft. from curb without parking

Application

- Roadways with steep grades, or those that cannot accommodate bike lanes in both directions due to width constraints
- Roadways with speed limit under 35 mph

Advantages/Disadvantages

- Provides designated space for bicyclists traveling at slower speeds than motorists due to uphill roadway grade
- Shared-lane markings in downhill travel lane encourage bicyclists to avoid open car doors where on-street parking is present
- Only provides bike lane in one direction where roads may be too narrow to accommodate bike lanes on both sides

Action Required

- Signs and markings
- Estimated cost: $29K per mile

Contraflow Bike Lane

Description

- Bike lane for bicycle travel in the opposite direction of vehicular travel on a one-way street
- May be accompanied by a bike lane or shared-lane marking in the direction of vehicular travel
- May include centerline striping, bicycle signals, and intersection pavement markings where appropriate
- **Typical Dimensions:** Min. 6 ft. wide bicycle lane adjacent to parked vehicles; 5 ft. acceptable adjacent to curb

Application

- Streets with one-way vehicle travel that are important two-way connections for bicyclists
- Contraflow bike lanes should be provided on the standard side of the roadway for the direction of travel

Advantages/Disadvantages

- Provides bicycle connections in areas of demand where alternate routes are unavailable
- Improvements may be required at intersections and driveways
- May decrease sidewalk or wrong-way riding

Action Required

- Signs and markings, bike-specific signal may be required
- Estimated cost: $34K per mile plus cost of signals if required

Shared-Lane Markings

Description

- Street markings used to indicate a shared lane for bicyclists and motorists
- Indicates where bicyclists should position themselves in the travel lane to avoid open car doors where on-street parking is present
- Provides visual cue of where to expect bicyclists
- **Typical Dimensions:** Min. 11 ft. from curb with on-street parking, min. 4 ft. from curb without on-street parking; spaced in max.intervals of 250 ft

Application

- Low-speed (less than 35 mph) roadways lacking space for dedicated bike lanes
- Travel lanes typically range from 10-14' wide

Advantages/Disadvantages

- Wider lanes allow motorists to pass safely within the lane, narrower lanes require motorists to change lanes to pass
- Low level of comfort for novice bicyclists
- Wider lanes may encourage higher vehicular speeds

Action Required

- Signs and markings
- Estimated cost: $11K per mile for one lane; $22K per mile for two lanes

Bike Boulevard

Description

- Streets with low vehicle volumes and speeds designated to provide priority to bicyclists
- Designed to discourage speeding and cut-through vehicular traffic
- May include traffic calming devices such as speed tables, traffic circles, or chicanes
- May include wayfinding signage to direct bicyclists and caution motorists

Application

- Low stress alternative route on side streets that parallel higher stress roadways
- Streets on which residents desire traffic calming or diversion

Advantages/Disadvantages

- Creates low-speed, low vehicular-volume environment
- Opportunity for plantings, rain gardens, or other green infrastructure
- Light construction may be required
- Improvements may be required at crossings

Action Required

- Construction (traffic calming measures), signs and markings
- Estimated cost: $250-500K per mile depending on the type of traffic calming used

CORRIDOR IMPROVEMENTS

Signed Route

Description

- Streets typically with low vehicle volumes and speeds designated by signage as a route for bicyclists
- Wayfinding signage indicates route destination and travel distance

Application

- Low stress routes, typically side streets with low-volume and low-speed vehicular traffic

Advantages/Disadvantages

- Provides signage for bicyclists indicating a preferred route between key destinations
- Relatively inexpensive to implement and maintain

Action Required

- Signs
- Estimated cost: $13K per mile

Intersection Geometry

Description

- Modifications to curb lines or edges of pavement at an intersection, typically related to decreasing intersection width or turning radii at the intersection corners

Application

- Slip lanes (pictured above), forked intersections, or wide turning radii that create multiple or long crossings for pedestrians or that allow motorists to turn at high rates of speed
- Where intersection design exceeds traffic volume and vehicle types

Advantages/Disadvantages

- Reclaims unused roadway space for pedestrians
- Decreases crossing distances
- Provides opportunity for plantings, rain gardens, pocket parks, or street furniture

Action Required

- Construction
- Retrofit with paint, planters, or flexible posts may be desired for temporary, experimental, or low-cost applications
- Estimated cost: Varies depending on materials used and degree of construction

Trailhead

Description

- A signed location along a shared-use path providing amenities to users
- May include maps, wayfinding, bulletin boards, trash receptacles, benches, drinking fountains, restrooms, shelters, or other features that serve user needs

Application

- Streets, paths, or parks where a path or trail can be accessed
- Often at locations where on- or off-street parking is available, allowing motorist access to the path

Advantages/Disadvantages

- Provides wayfinding and directions for users
- Opportunities to communicate rules, events, or other important information for path users

Action Required

- Purchase and install materials, signs
- Estimated cost: Varies depending on materials, fixtures, and degree of construction

SPOT IMPROVEMENTS

Crossing

Description

- Crosswalks indicate to pedestrians the appropriate place to cross the street and inform drivers of potential pedestrian movements in the street
- ADA-compliant curb ramps provide ramped access and tactile warning for persons with disabilities
- **Typical Dimensions:** Min. 6 ft. wide; curb ramps min. 5 ft. wide ramp, with level landing pad min. 4' wide from back of ramp

Application

- All existing and future crosswalks where sidewalks or other paths are present on both ends of the crosswalk
- All legs of signalized intersections
- Key pedestrian routes where crossings do not currently exist

Advantages/Disadvantages

- Facilitates pedestrian travel, particularly for persons with disabilities
- ADA-compliant ramps should be designed to prevent ponding of precipitation
- Wider crosswalks and ramps may be needed at locations with higher pedestrian volumes
- May require pedestrian signals

Action Required

- Construction, signs and markings
- Estimated cost: $410 -1,900K plus cost of signals if required (varies depending on materials used and type of construction)

Curb Extension

Description

- An extension of the sidewalk at intersections or mid-block to reduce pedestrian crossing distances and provide greater visibility for pedestrians waiting to cross a street
- Provide ADA-compliant curb ramps at crossing locations
- **Typical Dimensions:** 6 ft. extension from curb

Application

- Roadways needing reduced crossing distances, greater pedestrian visibility, or more space to accommodate pedestrians
- May be used to tighten curb radii

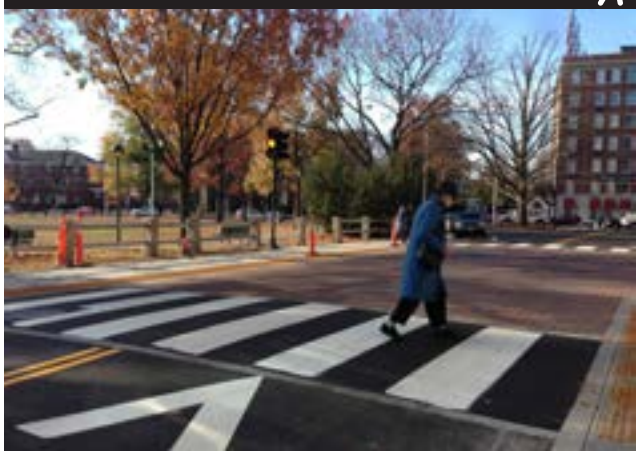
Advantages/Disadvantages

- Makes pedestrians more visible to oncoming vehicles
- Visually narrows the roadway providing cues to motorists to reduce speeds
- May reduce on-street parking
- May require utility modifications
- Should be designed to accommodate emergency vehicles
- Opportunity for plantings, rain gardens, or other green infrastructure
- Opportunity for pedestrian amenities such as trash receptacles, benches, etc.

Action Required

- Construction, signs and markings
- Estimated cost: $20K for a typical curb extension

Raised Intersection



Description

- A crosswalk or entire intersection raised from street level to sidewalk level
- Increases pedestrian priority and visibility and slows approaching vehicles
- Provide tactile warning panels for persons with disabilities
- **Typical Dimensions:** 6 in. rise over 6 ft.

Application

- Intersections with high pedestrian volumes
- Intersections that need extra emphasis or pedestrian visibility for motorists
- May include special paving on either side of the crosswalk to signal a transition in the roadway to motorists

Advantages/Disadvantages

- Calms traffic, increases pedestrian visibility
- Discourages vehicles from queuing on crosswalks
- Promotes motorists yielding to pedestrians
- May require bollards to prevent motorists from driving on sidewalk

Action Required

- Construction, signs and markings
- Estimated cost: $95K for a typical raised intersection

Pedestrian Crossing Island

Description

- Raised median or island that provides in-street refuge at a pedestrian crossing
- Crosswalk may be angled at refuge to encourage pedestrians to make eye contact with oncoming traffic
- Provide tactile warning panels for persons with disabilities
- **Typical Dimensions:** Min. 6 ft. wide, preferred 8 ft. wide

Application

- Where a crosswalk traverses a roadway with sufficient width to maintain travel lanes and construct a median
- Multi-lane roadways

Advantages/Disadvantages

- Limits pedestrian exposure to traffic and reduces crossing distances
- May act as a traffic calming device
- Opportunity for plantings, rain gardens, or other green infrastructure

Action Required

- Construction, signs and markings
- Estimated cost: $8K for a typical crossing island

SPOT IMPROVEMENTS

Pedestrian-Scale Lighting

Description

- Light fixtures used to illuminate a sidewalk or pathway typically closer to the ground and placed closer together than roadway lighting
- **Typical Dimensions:** 11-16 ft. pole height, 50-80 ft. spacing

Application

- Alerts motorists to the presence of pedestrians at crossings
- Areas with high pedestrian volumes
- Sidewalks or pathways not already illuminated by roadway lighting
- Sidewalks under bridges or vegetation where lighting is not present
- Transit stops

Advantages/Disadvantages

- May increase personal safety
- Provides a more comfortable pedestrian experience than underlit areas

Action Required

- Equipment purchase and installation
- Estimated cost: Varies depending on lighting style, spacing, electricity connections, materials and installation

Gate Access

Description

- Gates or removable bollards which accommodate pedestrian and bicyclist passage but limit vehicular access
- Gates can be opened for emergency and maintenance vehicles

Application

- Entrances to shared-use paths, or closed through-streets, or streets closed to vehicular traffic

Advantages/Disadvantages

- Reduces likelihood of unauthorized vehicular access on bike- and pedestrian-only rights of way
- Gates are more visible than bollards, which may cause injury to cyclists
- May require signage to indicate that the path or roadway is open to bicyclists and pedestrians

Action Required

- Purchase and install gate if not already existing
- Existing gates need a regular maintenance program to ensure that snow plows do not block access to pedestrians and bicyclists in the winter with snow piles
- Estimated cost: Varies depending on equipment and construction required for equipment installation

Traffic Signal or Beacon

Description

- Traffic signals may include full signalization of an intersection or the addition of pedestrian indications
- Beacons, such as rectangular rapid flash beacons or pedestrian hybrid beacons, are activated on demand by pedestrians or bicyclists in order to warn and control motor vehicle traffic
- Signal or beacon type varies depending on location, intended user, traffic volume, and speed

Application

- At uncontrolled crossings with high volumes of bicyclists and/or pedestrians
- Roadways with traffic volumes sufficient to make crossing at an unsignalized intersection difficult
- Mid-block shared-use path crossings

Advantages/Disadvantages

- Must meet Manual on Uniform Traffic Control Devices (MUTCD) traffic control device warrants
- Helps pedestrians and bicyclists cross busy streets
- Requires pedestrian or bicyclist activation or detection

Action Required

- Traffic engineering study
- Signal purchase and installation
- May require installation of ADA-compliant crossings
- Estimated cost: $15K for a rectangular rapid flash beacon; $75K for a pedestrian hybrid beacon; $150K for a full traffic signal

Bike Signal

Description

- Traffic signal intended for the exclusive use of bicycle traffic

Application

- Complex or high traffic volume intersections
- Intersections designed for travel patterns unique to bicyclists where additional signal control is required (e.g., contraflow or protected bicycle facilities)

Advantages/Disadvantages

- Must meet MUTCD traffic control device warrants
- Provides phasing for bicycle traffic, especially where vehicle turns are permitted
- Motorist education may be required

Action Required

- Signal purchase and installation
- Estimated cost: $5-30K

SPOT IMPROVEMENTS

Bike Lane Intersection Striping

Description

- Roadway striping used to indicate the intended bicycle path of travel through an intersection
- May include green pavement, bicycle markings, or dashed bicycle lane lines
- **Typical Dimensions:** Min. 4 ft. wide, should match connecting bike lane

Application

- Signalized, unsignalized, or complex intersections

Advantages/Disadvantages

- Provides greater visibility and comfort for bicyclists
- Highlights potential conflict areas between bicyclists and motorists
- Green high friction surface adds additional cost to bike facility

Action Required

- Signs and markings
- Estimated cost: $9K per typical intersection

Traffic Signal Timing

Description

- Traffic signal phase adjusted to accommodate bicyclist or pedestrian speeds
- Signal cycle may be shortened or lengthened depending on the length of the crossing and volume of traffic to reduce pedestrian wait times and allow pedestrians to clear the intersection
- Clearance phase may be extended to allow more time for bicyclists and pedestrians to complete a crossing

Application

- Corridors with high bicycle and pedestrian volumes

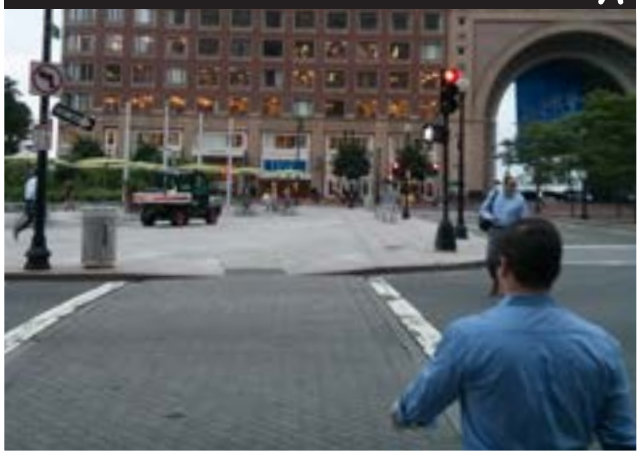
Advantages/Disadvantages

- Improves comfort of street crossing for pedestrians and bicyclists
- Adjusts wait times to pedestrian or bicyclist volume

Action Required

- Traffic engineering study
- Estimated cost: $1K per signalized (not including any additional equipment)

Leading Pedestrian Interval



Description

- Permits pedestrian movement to begin 3-7 seconds before a green light is given to motorists in the same direction of travel

Application

- At intersections where pedestrian volumes are high or where there are frequent conflicts between pedestrians and turning vehicle

Advantages/Disadvantages

- Reduces conflicts between slower pedestrians and turning vehicles
- Can reduce the amount of 'green time' given to motorists

Action Required

- May require signal equipment upgrades
- Estimated cost: $1K per location (not including any additional equipment)

Painted Intersection

Description

- Intersection with colorful painted pavement designs that may serve as traffic calming

Application

- Residential neighborhoods with an interest in traffic calming and/or community building

Advantages/Disadvantages

- Provides traffic calming
- Fosters neighborhood pride and community engagement

Action Required

- Signs and markings
- Estimated cost: Varies depending on cost of paint and labor

SPOT IMPROVEMENTS

Parklet

Description

- Permanent or temporary gathering area installed in the street adjacent to the curb as an extension of sidewalk space
- **Typical Dimensions:** Width of parking lane (7-9 ft.), length of one or more parking spaces (20+ ft.)

Application

- Streets with high pedestrian volumes, especially retail and commercial streets
- Streets with a demand for seating or landscaping

Advantages/Disadvantages

- Extends sidewalk gathering space
- Encourages leisure and street activation
- Allows for temporary trees or greenery when they do not otherwise fit on a sidewalk
- Small scale limits use
- May require removal of curbside parking

Action Required

- Equipment purchase and installation
- Estimated cost: Varies depending on materials, fixtures, and degree of construction

Bike Box

Description

- Designated space for bicycles in front of the stop line and behind the crosswalk at an intersection
- Facilitates left turns and visibility for bicyclists
- **Typical Dimensions:** 10-16 ft. between stop line and crosswalk.

Application

- Typically placed to accommodate lower stress turns from one bike facility to another on intersecting streets

Advantages/Disadvantages

- Increases bicyclist visibility and comfort level
- Can reduce conflicts between bicyclists and turning motorists
- Green high friction surface adds additional cost to bike facility

Action Required

- Signs and markings
- Estimated cost: $2K per bike box

Two-Stage Queue Box

Description

- Designated space for bicyclists to make a left turn in two movements, located in front of the crosswalk on a perpendicular street. To turn left, bicyclists travel straight through the intersection during a green light, pull right and wait in the queue box. When the cross street receives a green light, the bicyclist proceeds straight through the intersection, completing the left-turn in two stages.
- Typically located in front of the crosswalk on a perpendicular street

Application

- At signalized intersections with high speed and/or high volume of vehicular traffic where standard left turns are difficult

Advantages/Disadvantages

- Creates space for bicyclists to complete a left turn comfortably in high traffic areas
- May require educational signage to explain use of the facility

Action Required

- Markings
- Estimated cost: $1K per queue box

Bike Detection

Description

- Bicycle detectors installed at intersections allow traffic signals to detect bicyclists, which may not be detected by vehicle detectors
- They may be used to adjust the signal to bicycle specific timing

Application

- Streets with vehicle detection installed
- In-street detectors should include signage and markings to direct bicyclists where to position themselves for detection
- Infrared or video detection may not require additional signage

Advantages/Disadvantages

- Allows traffic signal to respond to bicyclist

Action Required

- Reinstall loop detector
- Traffic engineering study for additional detection methods
- Estimated cost: $500 per loop, other detection methods vary in cost

SPOT IMPROVEMENTS

Bike Parking

Description

- A rack that supports a bicycle upright with two points of contact and a secure place to affix a lock
- Variety of types available include in-street corrals, sidewalk racks, and covered bike parking for longer term needs
- **Typical Dimensions:** 6 ft. by 2 ft. area for single rack

Application

- Adjacent to curb, (10-20 bicycles per 1 vehicle parking space)
- Sidewalks, plazas, parks, or other destinations

Advantages/Disadvantages

- Replaces bike parking on parking meters, signage, and trees
- Improperly placed racks can create sidewalk barriers for pedestrians

Action Required

- Equipment purchase and installation
- Estimated cost: Varies by style and installation

Bike Maintenance Station

Description

- A location providing common bicycle maintenance equipment for impromptu bicycle repairs
- Typically includes air hose, repair stand, wrenches, and screwdrivers
- May also provide vending machines with items such as inner tubes, lights, grease, batteries, and snacks

Application

- At bike parking areas, parks, trails, or adjacent to bike shops

Advantages/Disadvantages

- Allows bicyclists to perform minor repairs or fill tires with air while out riding
- Increases visibility of bicycling
- Requires maintenance to ensure functionality

Action Required

- Equipment purchase and installation
- Estimated cost: Varies by style and installation

INFRASTRUCTURE PRIORITIZATION CRITERIA

The recommendations of this plan were prioritized based on the following criteria. Each recommendation was given a score for each of the following categories and then sorted into high, medium, and low priorities, based on an overall score. Safety and Connectivity scores are weighted in the overall score. Note that a high overall score may not reflect a high score for each criteria. The detailed scoring table can be found in Appendix 4. Details on the implementation process can be found in Chapter 5.

Safety
Scores in this criteria rate each recommendation's impact on safety of walking and bicycling conditions. Separated bicycle facilities on high volume streets received a high rating. Adding signed routes for bicycling on appropriate streets received medium ratings. Recommendations with a minor impact on safety received a low score.

Connectivity
Scores in this criteria rate each recommendation's impact on completing gaps and improving the connectivity of the streets and paths throughout the city. High ranking scores address high demand connections or connections with few alternative routes. Medium-ranked recommendations improve minor connections within the bicycle or pedestrian network. Low scoring recommendations do not significantly improve the city's nonmotorized network.

Equity
Scores for equity reflect each recommendation's impact on vulnerable or choice-limited users. Vulnerable users include children, seniors, or people with disabilities who may be slower, have mobility, or sensory limitations. Choice-limited users include people who have limited transportation options due to financial, geographic, or physical constraints. Recommendations for facilities near schools or neighborhoods with high populations of low-income or elderly residents received high scores; recommendations that indirectly address equity such as improving visibility for pedestrians at crosswalks received medium scores; recommendations with little direct impact on equity received a low score.

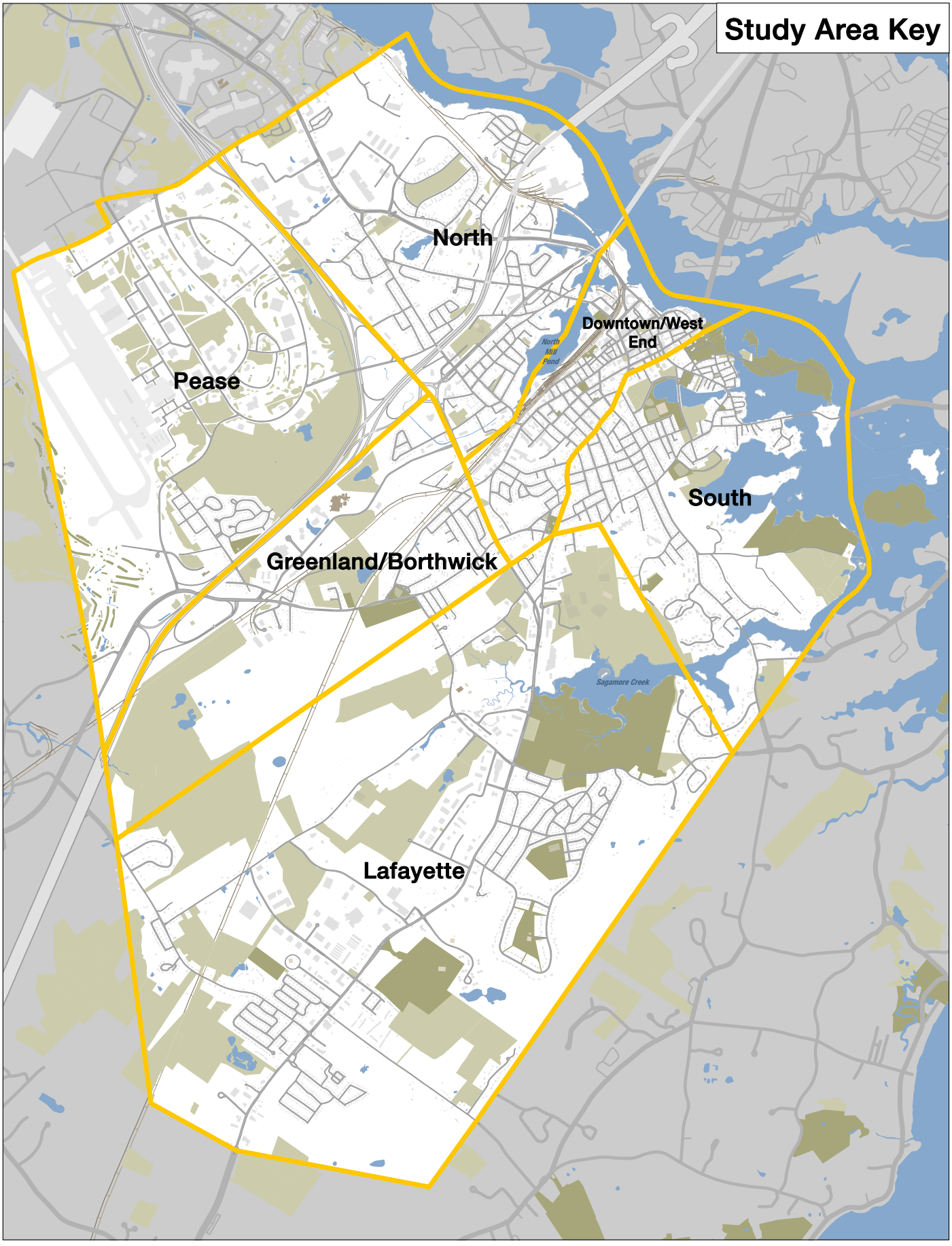
Feasibility
Feasibility scores reflect organizational or technical barriers to implementation. A high scoring recommendation can be completed with the lead department's existing technical capacity, such as updating street signage. A medium score requires outside technical assistance or organizational coordination between jurisdictions or public-private collaborations. A low score requires both technical assistance and coordination between multiple parties.

Capital Improvement Plan
Capital Improvement Plan scores reflect the projected timeframe of the recommendation. A high score indicates that the recommendation is in the City's Capital Improvement Plan or routine maintenance and scheduled to begin in the next three years. A medium score indicates the recommendation is in the City's Capital Improvement Plan, a planned standalone project, or routine maintenance and is scheduled to begin in over three years. A low score indicates a recommendation for a new, unplanned project.

Lifecycle Cost
Lifecycle costs reflect the recommendation's implementation and maintenance costs. Projects that are relatively inexpensive to implement or replace and do not add a significant burden to existing resources for maintenance received the highest score. Projects that require new maintenance resources and have a high cost of construction received the lowest score.

PRIORITIZATION CRITERIA APPLIED TO INFRASTRUCTURE RECOMMENDATIONS

	High	Medium	Low
Safety	Serious safety issue	Moderate safety issue	Minor safety issue or does not address safety
Connectivity	Critical connection in city and/or regional bicycle or pedestrian network	Minor connection in city and/or regional bicycle or pedestrian network	Not a significant component of the city or regional bicycle and pedestrian network
Equity	Primary focus is vulnerable or choice-limited users	Indirect impact for vulnerable or choice-limited users	Little impact for vulnerable or choice-limited users
Feasibility	No known organizational or technical barriers	Either an organizational or technical barrier (but not both)	Both organizational and technical barriers
Capital Improvement Plan	Aligns with existing program or project or routine maintenance in next 3 years	Aligns with planned program or project in next more than 3 years	No related or planned initiative
Lifecycle Cost	Low cost to implement and maintain	Medium cost to implement and maintain	High cost to implement and maintain


Study Area Key
North
Downtown/West End
North Mill Pond
Pease
South
Greenland/Borthwick
Sagamore Creek
Lafayette

Infrastructure Recommendations

The infrastructure recommendations cover the entire city and form an interconnected network. Each recommendation is based on the characteristics of the street and context. The project team gathered input from the public and completed an evaluation of each location in the field to determine what types of improvements are appropriate and feasible.

Specific details of the Bicycle and Pedestrian Plan recommendations are stored in a GIS database and include information about the location, such as dimensions, street operations, and a complete description of the recommendation. Each recommendation will require engineering and design prior to implementation.

The following maps summarize the infrastructure recommendations. The legend on each map describes existing facilities and the proposed type of improvement, referring to the facilities described in the Toolkit, provided previously in this chapter.

The maps divide the city into six areas, shown on the study area key map (facing page). For each area of the city, there is a bicycle recommendation map and a pedestrian recommendation map. (2 maps). Many projects are both pedestrian and bicycle improvements and they appear on both maps.

The projects identification numbers, shown as numbers on the maps, correspond to the project ID numbers listed in the table following the maps. This table also includes a description of the purpose of the project and what priority level it is.

City of Portsmouth
Bicycle and Pedestrian Plan

Pedestrian Network Plan

August 2014

EXISTING FACILITIES

- Side-Path, 1-Side
- Shared-Use Path
- Sidewalk

(#) Project Key

PROPOSED PEDESTRIAN IMPROVEMENTS

- Shared-Use Path
- Sidepath
- Add Sidewalk 2-Sides
- Add Sidewalk 1-Side
- Reconstruct Sidewalk
- Widen Sidewalk
- Shared Street
- Pedestrian Street

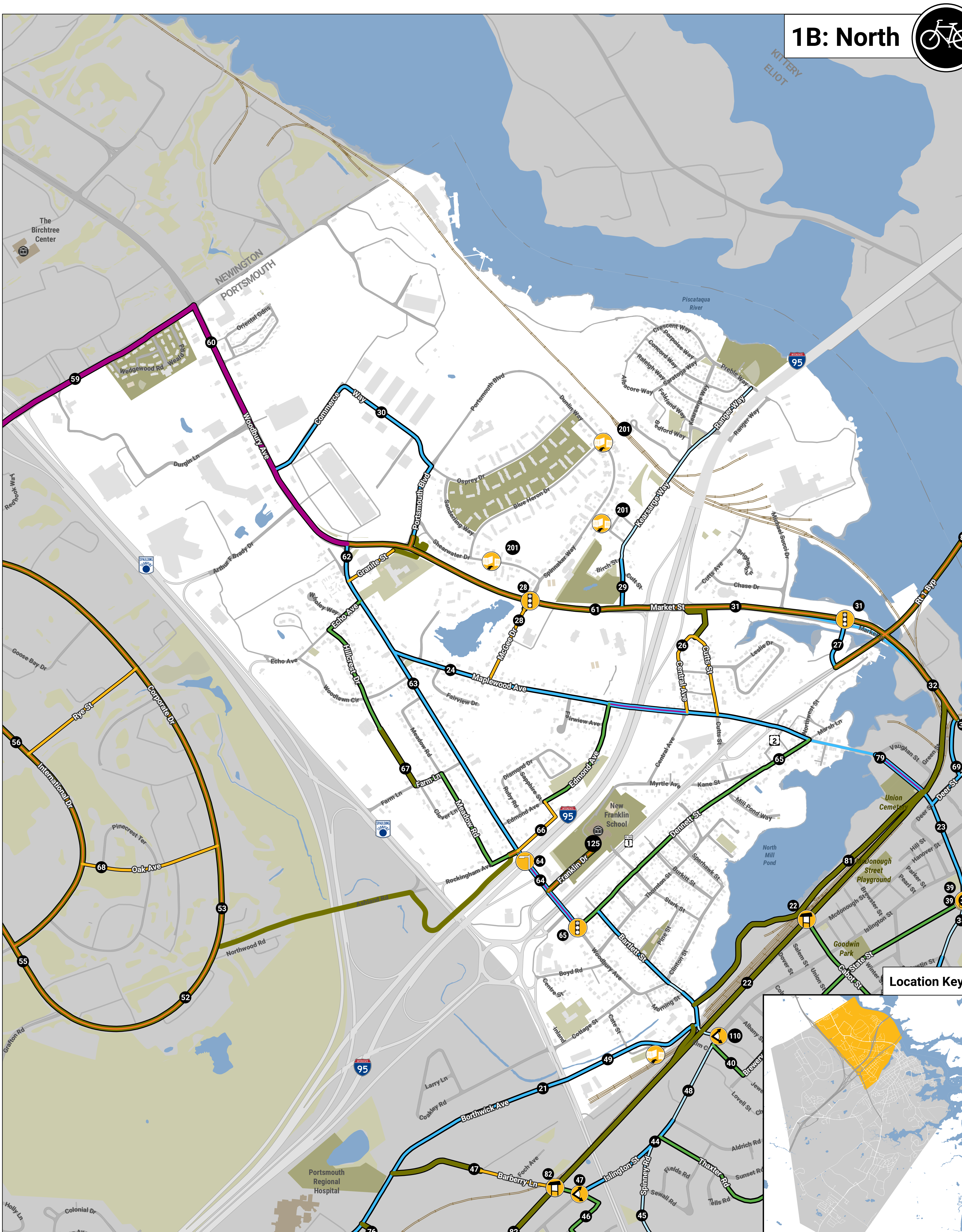
SPOT IMPROVEMENTS

- Gate Access
- Raised Intersection
- Pedestrian Refuge
- Pedestrian-Scale Lighting
- Actuated Signal
- ADA-Compliant Crosswalk
- Curb Extensions
- Intersection Geometry
- Trailhead

0 0.175 0.35 Miles

Toole Design Group

1B: North



City of Portsmouth
Bicycle and Pedestrian Plan

Bicycle Network Plan

August 2014

EXISTING FACILITIES

- Shared-Use Path
- Bike Lane
- Shared-Lane Marking
- Project ID

PROPOSED BIKE IMPROVEMENTS

- Shared-Use Path
- Side Path
- Cycle Track
- Buffered Bike Lane
- Bike Lane
- Contraflow Bike Lane
- Shared-Lane Marking
- Shared Street
- Pedestrian Street
- Bike Boulevard
- Signed Route

SPOT IMPROVEMENTS

- Gate Access
- Intersection Striping
- Raised Intersection
- Pedestrian Scale Lighting
- Actuated Signal
- Bike Signal
- Intersection Geometry
- Trailhead

0 0.125 0.25
Miles

2A: Lafayette

City of Portsmouth

Bicycle and Pedestrian Plan

Pedestrian Network Plan

August 2014

EXISTING FACILITIES

- Side-Path, 1-Side
- Shared-Use Path
- Sidewalk

PROPOSED PEDESTRIAN IMPROVEMENTS

- Shared-Use Path
- Sidepath
- Add Sidewalk 2-Sides
- Add Sidewalk 1-Side
- Reconstruct Sidewalk
- Widen Sidewalk
- Shared Street
- Pedestrian Street

\# Project Key

SPOT IMPROVEMENTS

- Gate Access
- Raised Intersection
- Pedestrian Refuge
- Pedestrian-Scale Lighting
- Actuated Signal
- ADA-Compliant Crosswalk
- Curb Extensions
- Intersection Geometry
- Trailhead

0 0.25 0.5 Miles

City of Portsmouth
Bicycle and Pedestrian Plan

Bicycle Network Plan

August 2014

EXISTING FACILITIES
- Shared-Use Path
- Bike Lane
- Shared-Lane Marking

(#) Project ID

PROPOSED BIKE IMPROVEMENTS
- Shared-Use Path
- Side Path
- Cycle Track
- Buffered Bike Lane
- Bike Lane
- Contraflow Bike Lane
- Shared-Lane Marking
- Shared Street
- Pedestrian Street
- Bike Boulevard
- Signed Route

SPOT IMPROVEMENTS
- Gate Access
- Intersection Striping
- Raised Intersection
- Pedestrian Scale Lighting
- Actuated Signal
- Bike Signal
- Intersection Geometry
- Trailhead

0 0.125 0.25 Miles

Toole Design Group


3A: Pease
Pease Blvd
Manchester Sq
Exeter St
New Hampshire Ave
International Dr
Corporate Dr
Rye St
Oak Ave
Market St
Maplewood Ave
Woodbury Ave
Edmond Ave
Northwood Rd
Durham St
Greenland Rd
Shattuck Rd
Country Club Rd
Portsmouth Transportation Center
Pannaway Playground
Portsmouth Regional Hospital
Borthwick Ave
Barberry Ln
WBBY Rd
Islington St
Harvard St
Griffin Rd
St. Mary's Cemetery
Portsmouth Plains Field
Calvary Cemetery
Middle Rd
Hampton Branch Trail, Phase 2
NEWINGTON
PORTSMOUTH
NEWINGTON
GREENLAND
PORTSMOUTH
GREENLAND
Location Key
City of Portsmouth
Bicycle and Pedestrian Plan
Pedestrian Network Plan
August 2014
EXISTING FACILITIES
Side-Path, 1-Side
Shared-Use Path
Sidewalk
Project Key
PROPOSED PEDESTRIAN IMPROVEMENTS
Shared-Use Path
Sidepath
Add Sidewalk 2-Sides
Add Sidewalk 1-Side
Reconstruct Sidewalk
Widen Sidewalk
Shared Street
Pedestrian Street
SPOT IMPROVEMENTS
Gate Access
Raised Intersection
Pedestrian Refuge
Pedestrian-Scale Lighting
Actuated Signal
ADA-Compliant Crosswalk
Curb Extensions
Intersection Geometry
Trailhead
0
0.225
0.45
Miles

City of Portsmouth
Bicycle and Pedestrian Plan

Bicycle Network Plan

August 2014

EXISTING FACILITIES
- Shared-Use Path
- Bike Lane
- Shared-Lane Marking

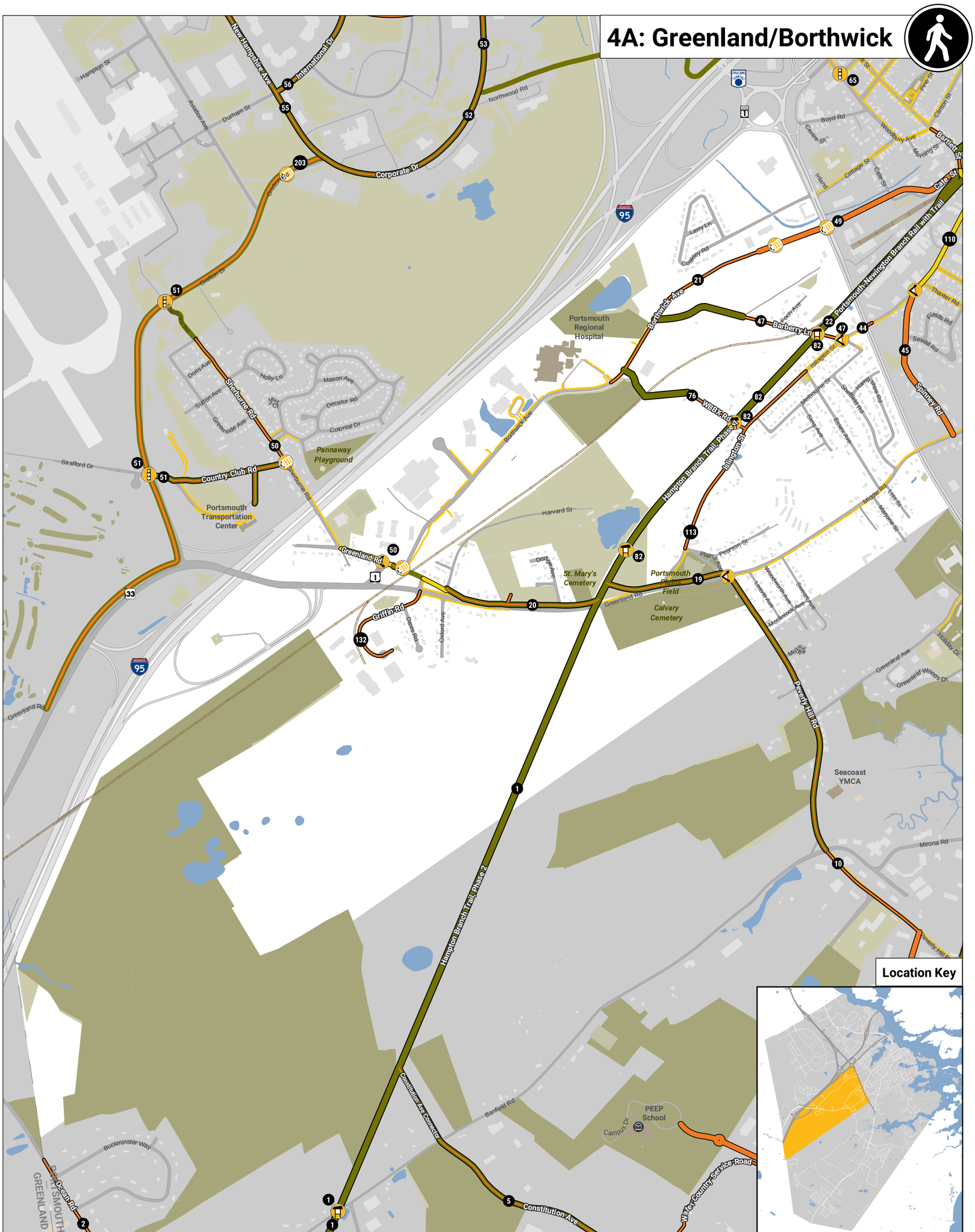
(#) Project ID

PROPOSED BIKE IMPROVEMENTS
- Shared-Use Path
- Side Path
- Cycle Track
- Buffered Bike Lane
- Bike Lane
- Contraflow Bike Lane
- Shared-Lane Marking
- Shared Street
- Pedestrian Street
- Bike Boulevard
- Signed Route

SPOT IMPROVEMENTS
- Gate Access
- Intersection Striping
- Raised Intersection
- Pedestrian Scale Lighting
- Actuated Signal
- Bike Signal
- Intersection Geometry
- Trailhead

0 0.125 0.25 Miles

Toole Design Group



City of Portsmouth
Bicycle and Pedestrian Plan

Pedestrian Network Plan

August 2014

EXISTING FACILITIES
- Side-Path, 1-Side
- Shared-Use Path
- Sidewalk

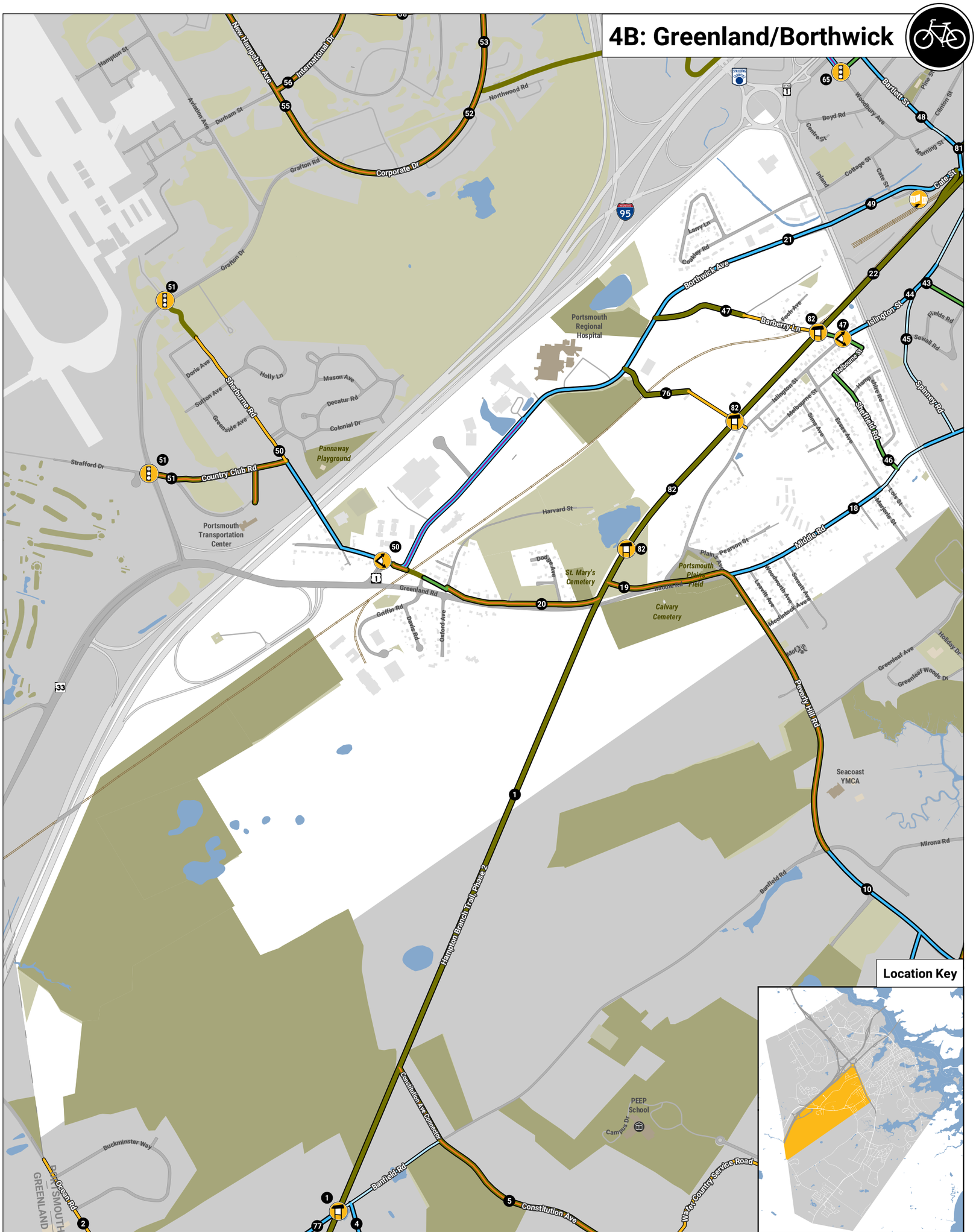
Project Key

PROPOSED PEDESTRIAN IMPROVEMENTS
- Shared-Use Path
- Sidepath
- Add Sidewalk 2-Sides
- Add Sidewalk 1-Side
- Reconstruct Sidewalk
- Widen Sidewalk
- Shared Street
- Pedestrian Street

SPOT IMPROVEMENTS
- Gate Access
- Raised Intersection
- Pedestrian Refuge
- Pedestrian-Scale Lighting
- Actuated Signal
- ADA-Compliant Crosswalk
- Curb Extensions
- Intersection Geometry
- Trailhead

0 0.2 0.4
Miles

Toole Design Group



City of Portsmouth
Bicycle and Pedestrian Plan

Bicycle Network Plan

August 2014

EXISTING FACILITIES
- Shared-Use Path
- Bike Lane
- Shared-Lane Marking

(#) Project ID

PROPOSED BIKE IMPROVEMENTS
- Shared-Use Path
- Side Path
- Cycle Track
- Buffered Bike Lane
- Bike Lane
- Contraflow Bike Lane
- Shared-Lane Marking
- Shared Street
- Pedestrian Street
- Bike Boulevard
- Signed Route

SPOT IMPROVEMENTS
- Gate Access
- Intersection Striping
- Raised Intersection
- Pedestrian Scale Lighting
- Actuated Signal
- Bike Signal
- Intersection Geometry
- Trailhead

0 0.125 0.25 Miles

Toole Design Group

5A: South

Union Cemetery
North Mill Pond
North Mill Pond Path
Portsmouth-Newington Branch Rail with Trail
Goodwin Park
St. Patrick's School
Portsmouth Public Library
Portsmouth Middle School
Portsmouth District Court
Strawbery Banke Museum
Prescott Park
Trial Gardens
Four Tree Island
Peirce Island
South Mill Pond
South Mill Pond Path
Leary Field
Leary Field Path
Portsmouth City Hall
South Street Playground
Little Harbour School
Clough Field
Piscataqua River
Leach's Island
Wentworth Coolidge State Historical Site
Little Harbor Trust Fund Land
Portsmouth High School
Jones Avenue Recreation Area
Sagamore Creek
Urban Forestry Center
PORTSMOUTH
NEW CASTLE
RYE
Lafayette Rd
Sagamore Ave
Jones Ave
South St
Wentworth Rd
Elwyn Rd
Location Key

City of Portsmouth

Bicycle and Pedestrian Plan

Pedestrian Network Plan

August 2014

EXISTING FACILITIES

- Side-Path, 1-Side
- Shared-Use Path
- Sidewalk

Project Key

PROPOSED PEDESTRIAN IMPROVEMENTS

- Shared-Use Path
- Sidepath
- Add Sidewalk 2-Sides
- Add Sidewalk 1-Side
- Reconstruct Sidewalk
- Widen Sidewalk
- Shared Street
- Pedestrian Street

SPOT IMPROVEMENTS

- Gate Access
- Raised Intersection
- Pedestrian Refuge
- Pedestrian-Scale Lighting
- Actuated Signal
- ADA-Compliant Crosswalk
- Curb Extensions
- Intersection Geometry
- Trailhead

0 0.15 0.3
Miles

5B: South

City of Portsmouth
Bicycle and Pedestrian Plan

Bicycle Network Plan

August 2014

EXISTING FACILITIES
- Shared-Use Path
- Bike Lane
- Shared-Lane Marking

\# Project ID

PROPOSED BIKE IMPROVEMENTS
- Shared-Use Path
- Side Path
- Cycle Track
- Buffered Bike Lane
- Bike Lane
- Contraflow Bike Lane
- Shared-Lane Marking
- Shared Street
- Pedestrian Street
- Bike Boulevard
- Signed Route

SPOT IMPROVEMENTS
- Gate Access
- Intersection Striping
- Raised Intersection
- Pedestrian Scale Lighting
- Actuated Signal
- Bike Signal
- Intersection Geometry
- Trailhead

0 0.125 0.25
Miles

Toole Design Group

City of Portsmouth
Bicycle and Pedestrian Plan

Pedestrian Network Plan

August 2014

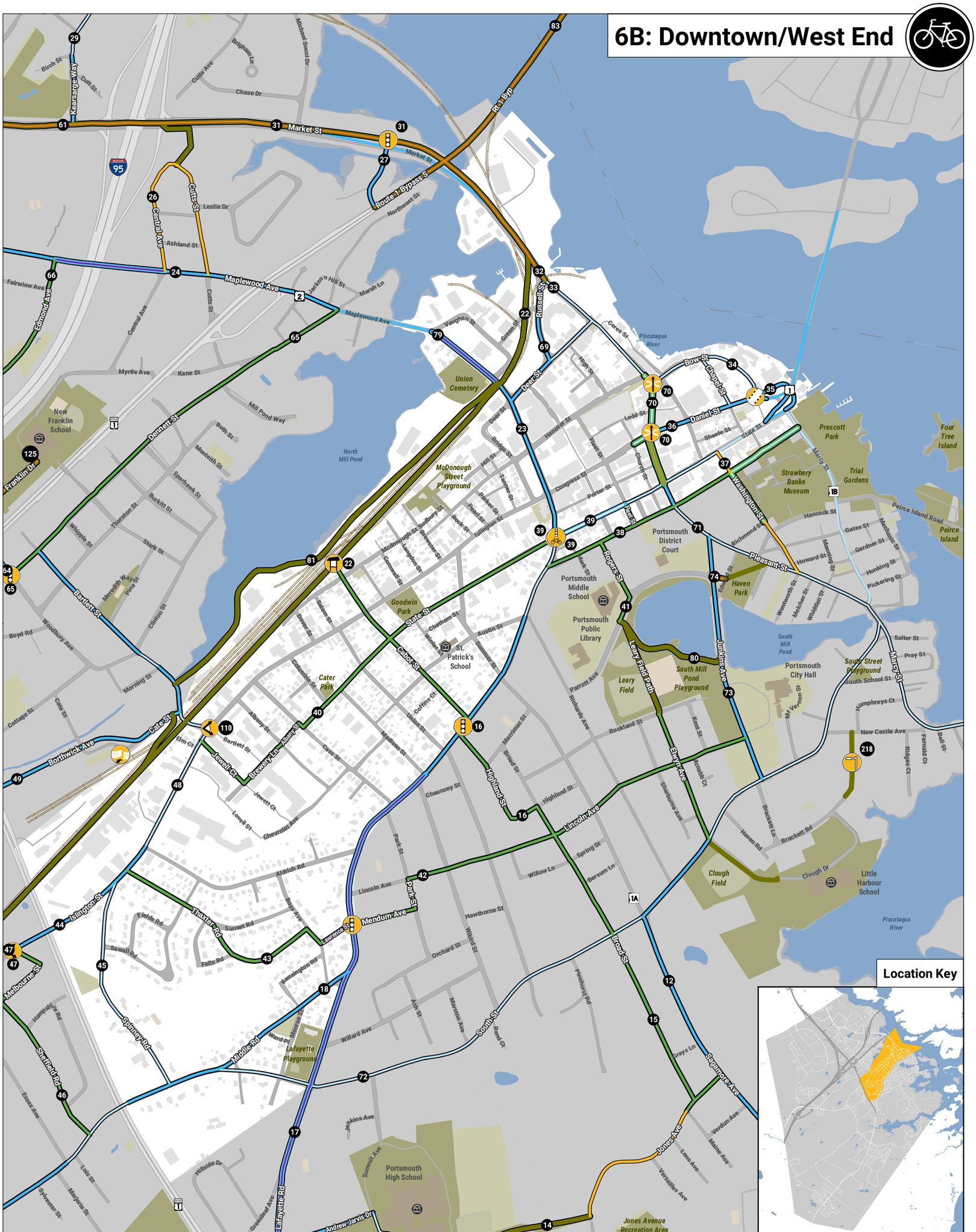
EXISTING FACILITIES
- Side-Path, 1-Side
- Shared-Use Path
- Sidewalk

(#) Project Key

PROPOSED PEDESTRIAN IMPROVEMENTS
- Shared-Use Path
- Sidepath
- Add Sidewalk 2-Sides
- Add Sidewalk 1-Side
- Reconstruct Sidewalk
- Widen Sidewalk
- Shared Street
- Pedestrian Street

SPOT IMPROVEMENTS
- Gate Access
- Raised Intersection
- Pedestrian Refuge
- Pedestrian-Scale Lighting
- Actuated Signal
- ADA-Compliant Crosswalk
- Curb Extensions
- Intersection Geometry
- Trailhead

0 0.125 0.25 Miles



City of Portsmouth
Bicycle and Pedestrian Plan

Bicycle Network Plan

August 2014

EXISTING FACILITIES
- Shared-Use Path
- Bike Lane
- Shared-Lane Marking

(#) Project ID

PROPOSED BIKE IMPROVEMENTS
- Shared-Use Path
- Side Path
- Cycle Track
- Buffered Bike Lane
- Bike Lane
- Contraflow Bike Lane
- Shared-Lane Marking
- Shared Street
- Pedestrian Street
- Bike Boulevard
- Signed Route

SPOT IMPROVEMENTS
- Gate Access
- Intersection Striping
- Raised Intersection
- Pedestrian Scale Lighting
- Actuated Signal
- Bike Signal
- Intersection Geometry
- Trailhead

0 0.1 0.2 Miles

Toole Design Group

LIST OF INFRASTRUCTURE RECOMMENDATIONS

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
1	Bike/Ped	2A/B:Lafayette	High	Hampton Branch Trail, Phase 2	Major regional trail connection, existing CIP project, pending State acquisition of former rail ROW. Trail provides long distance route from Hampton to Portsmouth.	Hampton Branch Trail	Greenland Line	NH33
1	Spot	4A/B:Greenland/ Borthwick, 2A/B:Lafayette	High	Hampton Branch Trail, Phase 2	Trail access location	Hampton Branch Trail	Banfield Rd	NA
1	Spot	4A/B:Greenland/ Borthwick, 2A/B:Lafayette	High	Hampton Branch Trail, Phase 2	Trail access location	Hampton Branch Trail	Ocean Rd	NA
2	Bike/Ped	2A/B:Lafayette	Low	Hampton Branch Trail connection at Ocean Rd	Widen sidewalk with reconstruction to create low-stress sidepath connection from Hampton Branch Trail to Lafayette Rd.	Ocean Rd	Lafayette Rd	Hampton Branch Trail
3	Bike	2B:Lafayette	Low	On-road route to Rye	Shared-lane markings provide guidance for experienced cyclists on constrained roadway.	Lang Rd	Rye Line	Lafayette Rd
4	Bike	2B:Lafayette	Low	Hampton Branch Trail connection at Heritage Ave	Bike lane retrofit on Heritage Ave. Long term, boardwalk/path connection from Heritage Ave at Banfield Rd directly to trail on undeveloped land.	Heritage Ave	Lafayette Rd	Banfield Rd
5	Bike/Ped	2A/B:Lafayette	High	Hampton Branch Trail connection at Constitution Ave	Sidepath with reconstruction in existing ROW - mostly undeveloped land.	Constitution Ave	Hampton Branch Trail	Lafayette Rd
6	Bike/Ped	2A/B:Lafayette	Med	Lafayette Rd alternative connection to Walmart	Bike lanes and sidewalks two sides on West Rd. Short sidepath connection to signed route on Water Country service road. New path connection punches through to Walmart parking lot from Constitution Rd.	Walmart Path, Water Country Rd, West Rd	Constitution Ave	Walmart Sidewalk
7	Bike/Ped	2A/B:Lafayette	High	Lafayette Rd Complete Street reconstruction	Based on NHDOT existing Rte 1 corridor study, construct sidepaths on each side of road in available ROW. No alteration of existing traffic patterns necessary.	Lafayette Rd	Rye Line	Andrew Jarvis Dr
7	Spot	2A/B:Lafayette	High	Lafayette Rd Complete Street reconstruction	Add ADA-compliant crosswalks and actuated signal to cross Lafayette Rd. Safe route to Portsmouth Early Education Program (PEEPS).	Lafayette Rd	Campus Dr	NA

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
7	Spot	2A/B:Lafayette	High	Lafayette Rd Complete Street reconstruction	Add ADA-compliant crosswalks and pedestrian signals to all legs of intersections with sidepath reconstruction.	Lafayette Rd	Elwyn Rd	NA
7	Spot	2A/B:Lafayette	High	Lafayette Rd Complete Street reconstruction	Existing intersection improvement. Add ADA-compliant crosswalks and pedestrian signals with construction of sidepath.	Lafayette Rd	Heritage Ave	NA
7	Spot	2A/B:Lafayette	High	Lafayette Rd Complete Street reconstruction	Add ADA-compliant crosswalks and pedestrian signals with construction of sidepath and extension of Longmeadow Rd.	Lafayette Rd	Ocean Rd	NA
7	Spot	2A/B:Lafayette	High	Lafayette Rd Complete Street reconstruction	Add ADA-compliant crosswalks and pedestrian signals on traffic lights with sidepath construction. Remove slip lanes on White Cedar Blvd with reconstruction of Lafayette Rd.	Lafayette Rd	White Cedar Blvd	NA
7	Spot	2A/B:Lafayette	High	Lafayette Rd Complete Street reconstruction	Add ADA-compliant crosswalks and pedestrian signals to all legs of intersections with sidepath reconstruction.	Lafayette Rd	Wilson Rd	NA
8	Bike	2B:Lafayette	Med	Elwyn Park traffic calming	Bike boulevard with traffic calming at key intersections slows drivers and provides connection to Dondero School.	Harding, Rd., Hoover Dr, F.W. Hartford Dr, T.J. Gamester Dr., McKinley Rd	Lafayette Rd	Elwyn Rd
8	Ped	2A:Lafayette	Med	Elwyn Park traffic calming	Sidewalk with traffic calming at key intersections slows drivers and provide connection to Dondero School.	Harding Rd, Van Buren Rd, Filmore Rd, Adams Ave, Taft Rd, Wilson Rd	Adams Ave	Elwyn Rd
8	Spot	2A/B:Lafayette	Med	Elwyn Park traffic calming	Add curb extensions for pedestrian visibility.	Filmore Rd	Van Buren Ave	NA
8	Spot	2A/B:Lafayette	Med	Elwyn Park traffic calming	Add curb extensions for pedestrian visibility.	McKinley Rd	Van Buren Ave	NA
10	Bike/Ped	4A/B:Greenland/ Borthwick, 2A/B:Lafayette	High	Low-stress connection to YMCA and neighborhoods	Existing CIP project. Sidepath with acquired ROW to create critical north-south connection between Middle Rd and Lafayette Rd. Sidewalk on one side from Lafayette to Mirona Rd.	Peverly Hill Rd	Lafayette Rd	Middle Rd
11	Spot	2A/B:Lafayette	High	Elwyn Rd Improvements	Add actuated signal, and ADA-compliant crosswalks with sidepath construction on Elwyn Rd.	Elwyn Rd	Harding Rd	NA

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
11	Bike/Ped	2A/B:Lafayette	High	Elwyn Rd Improvements	Sidepath on north side of Elwyn Rd. Coordinate with Forestry Center for potential placement inside Forestrry Center property from Lafayette Rd to Harding Rd. Major reconstruction with potential parcel acquisition or easements from Harding Rd to Rye Line.	Elwyn Rd	Lafayette Rd	Rye Line
12	Spot	2A/B:Lafayette, 5A/B:South	High	Sagamore Rd Complete Street reconstruction	Add pedestrian signal at intersection. Add ADA-compliant crosswalks on south and east legs of intersection with construction of sidewalk on south side of South St.	Sagamore Ave	South St	NA
12	Bike/Ped	2A/B:Lafayette, 5A/B:South	High	Sagamore Rd Complete Street reconstruction	Existing CIP project. Bike lanes and sidewalk one-side from South St to Rye provide a route into and out of town and connections to high demand route on Rte 1B.	Sagamore Rd	South St	Rye Line
13	Bike/Ped	2A/B:Lafayette, 5A/B:South	High	Elwyn Rd Alternative Route	Shared-use path through Urban Forestry Center connecting to Gosport Rd/Odiorne Point partially through existing utility easement. Signed bicycle route on Gosport Rd/Odiorne Point to connect to Sagamore Rd.	Urban Forestry Center easement, Gosport Rd, Odiorne Point	Elwyn Rd	Sagamore Rd
14	Spot	2A/B:Lafayette, 5A/B:South	High	Safe Route to High School	Add ADA-compliant crosswalk for crossing at Jones Ave.	Sagamore Ave	Jones Ave	NA
14	Bike/Ped	2A/B:Lafayette, 5A/B:South	High	Safe Route to High School	Shared-use path on unconstructed ROW at Jones Ave and bike boulevard on Jones Ave to Broad St. Sidewalks on two-sides on Jones Ave to Broad St. Bike lanes on Andrew Jarvis Dr.	Jones Ave, Summit Ave, High School Connector, Andrew Jarvis Dr	Broad St	Andrew Jarvis Dr
15	Bike	5B:South	Low	Broad St bike boulevard	Bike boulevard with traffic calming at key points on Broad St and Highland St from Jones Ave to Middle St. Low-stress alternative to Sagamore Ave. Forms connection to high school with Jones Ave.	Jones Ave, Broad St	Sagamore Ave	South St
16	Bike	6B:Downtown/West End, 5B:South	Med	Cabot St, Highland St, Broad St bike boulevard	North-south neighborhood route to Hampton Branch Trail. Bike boulevard with traffic calming in conjunction with Broad St bike boulevard.	Cabot St, Highland St, Broad St	South St	Portsmouth-Newington Branch Rail with Trail

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
16	Spot	6A/B:Downtown/ West End, 5A/B:South	Med	Cabot St, Highland St, Broad St bike boulevard	Add activated signal on Middle St to clear traffic between Cabot St and Highland St enabling low-stress crossing for bike boulevard users.	Middle St	Cabot St	Highland St
16	Spot	6A/B:Downtown/ West End, 5A/B:South	Med	Safe Route to St. Patrick School	Add ADA-compliant crosswalks to all legs of intersection.	Austin St	Cabot St	NA
17	Bike	2B:Lafayette, 5B:South	High	Lafayette Rd/ Middle St bike lanes	Existing CIP project. Primary north-south connection. Buffered bike lanes from Andrew Jarvis Dr to Wibird St. Consolidate parking to one side in this low-use residential area. Add bike lanes and shared-lane markings from Wibird St to Congress St.	Lafayette Rd, Middle St	Andrew Jarvis Dr	Congress St
17	Ped	2A:Lafayette, 5A:South	High	Lafayette Rd/ Middle St improvements	Add sidewalk on one side on Lafayette Rd to connect existing sidewalks on Lafayette Rd and Greenleaf Ave to high school.	Lafayette Rd	Greenleaf Ave	South St
17	Spot	6A/B:Downtown/ West End	High	Lafayette Rd/ Middle St improvements	Construct curb extensions with ADA-compliant crosswalks.	Middle St	Richards Ave	NA
18	Bike	4B:Greenland/ Borthwick, 2B:Lafayette, 5B:South	Low	Connection to Portsmouth Plains Field	Bike lanes on Middle Rd from Lafayette Rd to park. Shared-lane markings on South St for additional connection. Parking removal may be necessary on some blocks where off-street parking already exists.	Middle Rd, South St	Middle St, Lafayette Rd	Peverly Hill Rd
19	Spot	4A/B:Greenland/ Borthwick	High	Hampton Branch Trail Connection at Middle Rd	Remove existing crosswalk and replace with ADA-compliant crosswalk perpendicular to roadway with extension of existing sidewalk on Middle Rd. Add pedestrian countdown signal. Consider decrease of turning radii on Peverly Hill Rd.	Middle Rd	Peverly Hill Rd	NA
19	Bike/Ped	4A/B:Greenland/ Borthwick	High	Hampton Branch Trail Connection at Middle Rd	Widen existing sidewalk on south side of Portsmouth Plains Field for sidepath connection from Peverly Hill Rd to Hampton Branch Trail. Provide sidepath connection through future athletic fields with parking access for trail users.	Middle Rd, Portsmouth Plains	Peverly Hill Rd	Hampton Branch Trail

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
20	Bike/Ped	4A/B:Greenland/ Borthwick	High	Hampton Branch Trail Connection at NH 33	Provide trail link to existing sidewalk at NH 33 overpass. Widen existing sidewalk for sidepath from trail to Greenland Rd. Reconstruct sidewalk on Greenland Rd. Bike boulevard on Greenland Rd requires traffic calming near intersection with NH 33 to provide low-stress connection to Borthwick Ave over existing pedestrian bridge.	NH 33, Greenland Rd	Hampton Branch Trail	Borthwick Ave
21	Bike	4B:Greenland/ Borthwick	Med	Borthwick Ave improvements	Buffered bike lanes with travel lane narrowing (lane diet) on Borthwick Ave from Greenland Rd to Hospital. Bike lanes on Borthwick Ave east of hospital. Some road widening in existing ROW may be required east of the Hospital.	Borthwick Ave	Route 1 Bypass	Route 33
21	Ped	4A:Greenland/ Borthwick, 1A:North	Med	Borthwick Ave improvements	Add sidewalk on one side near hospital to connect to existing sidewalk network. Add sidewalks on two sides on approach to Route 1 Bypass to provide ADA-compliant bus stops in front of hotel. Road widening necessary in existing ROW.	Borthwick Ave	Portsmouth Regional Hospital	Route 1 Bypass
21	Spot	4A/B:Greenland/ Borthwick, 1A/B:North	Med	Borthwick Ave improvements	Add ADA-compliant crosswalks and pedestrian signals with sidewalks on all legs of intersection.	Route 1 Bypass	Borthwick Ave	NA
21	Spot	4A/B:Greenland/ Borthwick, 1A/B:North	Med	Borthwick Ave improvements	Add midblock ADA-compliant crosswalk and warning signage for bus stop crossing.	Borthwick Ave	Route 1 Bypass	NA
22	Spot	6A/B:Downtown/ West End, 4A/B:Greenland/ Borthwick	Med	Portsmouth-Newington Branch Rail with Trail	Add trail crossing and access point to bike boulevard on Cabot St.	Portsmouth-Newington Branch Trail	Cabot St	NA
22	Bike/Ped	6A/B:Downtown/ West End, 4A/B:Greenland/ Borthwick	Med	Portsmouth-Newington Branch Rail with Trail	Construct shared-use path alongside active rail line to complete major regional connection from Hampton Branch Trail to proposed sidepath on Market Street.	Portsmouth-Newington Branch Rail with Trail	Barberry Ln	Market St
23	Bike/Ped	6A/B:Downtown/ West End	High	Maplewood Ave Complete Street reconstruction	Existing project. Reduce the number of travel lanes to calm traffic and add bike lanes from Congress St to rail crossing. Widen sidewalks and add curb extensions wherever feasible.	Maplewood Ave	Congress St	Rail Crossing

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
23	Spot	6A/B:Downtown/ West End	High	Maplewood Ave Complete Street reconstruction	Existing project. Add curb extensions with sidewalk widening on Maplewood Ave where feasible.	Maplewood Ave	Deer St	NA
23	Spot	6A/B:Downtown/ West End	High	Maplewood Ave Complete Street reconstruction	Existing project. Add curb extensions with sidewalk widening on Maplewood Ave where feasible.	Maplewood Ave	Hanover St	NA
23	Spot	6A/B:Downtown/ West End	High	Maplewood Ave Complete Street reconstruction	Existing project. Add concurrent signal phasing and curb extensions with sidewalk widening on Maplewood Ave where feasible.	Maplewood Ave	Congress St	NA
24	Bike	1B:North	Med	Maplewood Ave improvements	Existing project. Add buffered bike lanes with restriping on Maplewood from Edmond Ave to Central Ave in conjunction with bike boulevards on connecting streets.	Maplewood Ave	Central Ave	Edmond Ave
24	Bike/Ped	1A/B:North	High	Maplewood Ave improvements	Existing project. Add bike lanes and sidewalks on one side for high demand route. Reconstruction or addition of sidewalk on 1-side necessary where already existing. Road reconstruction possible within existing ROW. Utility coordination necessary.	Maplewood Ave	Dennett St	Woodbury Ave
24	Spot	1A/B:North	High	Maplewood Ave improvements	Study narrowing turning radii at intersection. Add ADA-compliant crosswalks with addition of curbed sidewalk on south side adjacent to truck stop.	Maplewood Ave	Cutts St	NA
24	Spot	1A/B:North	High	Maplewood Ave improvements	Study narrowing turning radii at intersection. Add ADA-compliant crosswalks.	Maplewood Ave	Route 1 Ramp	NA
26	Bike/Ped	1A/B:North	Low	Maplewood Ave to Market St Connection	Signed route on Central Ave and Cutts St. Construct Sidewalks on two sides fo Central Ave and Cutts St from Maplewood Ave to Ashland St. Widen existing sidepath from Central Ave to Market St. Provide accommodation for bicyclists to cross to proposed sidepath on north side of Market at I-95 on-ramp signal.	Central Ave, Market St Connector	Maplewood Ave	Market St

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
27	Bike	1B:North	Low	Albacore Museum access	Existing project. Add bike lanes on Albacore Museum Access Rd. to deliver visitors to museum via proposed sidepath on Market St. and future bike lanes on Sarah Mildred Long Bridge. Signalized crossing at Market street required.	Albacore Museum Access Rd	Market St	Albacore Museum Access Rd
27	Ped	1A:North	Low	Albacore Museum access	Existing project. Add sidewalk on north side of Albacore Museum Access Rd. to deliver visitors to museum via proposed sidepath on Market St. Signalized crossing at Market street required.	Albacore Museum Access Rd	Market St	Albacore Museum Access Rd
28	Spot	1A/B:North	Low	Maplewood Ave to Market St and Spinnaker Pt shortcut	Explore feasibility of signal installation for users to cross to proposed path on north side from McGee Dr.	Market St	McGee Dr	NA
28	Bike/Ped	1A/B:North	Low	Maplewood Ave to Market St and Spinnaker Pt shortcut	Signed route on McGee Dr and short sidepath connection to proposed sidepath on Market St. Signalized bike/pedestrian crossing of Market St required.	McGee Dr	Maplewood Ave	Market St
29	Bike	1B:North	Low	Hislop Park access	Bike Lanes on Kearsarge Way from Market St to Mangrove St. Shared-lane markings direct bicyclists to Hislop Park in constrained ROW.	Kearsarge Way	Market St	Preble Way
30	Bike	1B:North	Low	Commerce Way business access	Bike lanes on Portsmouth Blvd and Commerce Way from Market St to Woodbury Ave.	Commerce Way, Portsmouth Blvd	Market St	Woodbury Ave
30	Ped	1A:North	Low	Commerce Way business access	Existing project. Sidewalks on two sides on Commerce Way with reconstruction.	Commerce Way	Portsmouth Blvd	Woodbury Ave
31	Bike/Ped	1A/B:North, 6A/B:Downtown/ West End	High	Market St Gateway reconstruction	Existing project. Wide sidewalk on north side of Market St and bike lanes on both sides.	Market St	I-95	Russell St
31	Spot	1A/B:North, 6A/B:Downtown/ West End	High	Market St Gateway reconstruction	Add actuated signal and ADA-compliant crosswalks to connect proposed sidepath on north side of Market St to Albacore Museum. Crossing should be wide enough to accommodate bicyclists.	Market St	Albacore Museum Driveway	NA

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
31	Spot	1A/B:North, 6A/B:Downtown/ West End	High	Market St Gateway reconstruction	Remove splitter island on Russell St. Narrow roadway of Russel St and decrease turning radius from Market St. Add ADA-compliant crosswalks and pedestrian signals.	Market St	Russell St	NA
33	Bike	6B:Downtown/West End	Low	Market Street Gateway connection	Shared-lane markings connect Market St sidepath to downtown.	Market St	Russell St	Hanover St
34	Bike	6B:Downtown/West End	Low	Downtown connectivity	Shared-lane markings on Bow St and Chapel St.	Bow St, Chapel St	Penhallow St	Daniel St
35	Bike	6B:Downtown/West End	Med	Memorial Bridge, Scott Ave existing facility upgrade	Non-standard bike lane striping from Memorial Bridge reconstruction project to be restriped according to standard designs.	Scott Ave, Harbour Pl, State St, Dutton Ave	State St	Daniel St
35	Spot	6A/B:Downtown/ West End	Med	Memorial Bridge, Scott Ave existing facility upgrade	Stripe dashed green bike lane through this wide intersection to provide guidance to bicyclists and motorists.	Scott Ave	Daniel St	NA
36	Bike	6B:Downtown/West End	Low	Existing facility upgrade	Bike lanes on Daniel St where shared-lane markings currently exist.	Daniel St	Bow St	Market Square
37	Spot	5A/B:South	Low	Strawberry Banke Museum connection	Add ADA-compliant crosswalks and curb ramps consistent with shared street design for continuous travel across Hancock St on Washington St.	Hancock St	Washington St	NA
37	Bike/Ped	5A/B:South	Low	Strawberry Banke Museum connection	Shared-street from State St to Hancock St provides more comfortable space for bicyclists and pedestrians. Narrow sidewalks on this historic street are not ADA-compliant. Signed Route from Pleasant St to Hancock St directs bicyclists on existing low-stress street	Washington St	Pleasant St	State St
38	Bike/Ped	6A/B:Downtown/ West End, 5A/B:South	Low	Court St bike boulevard, Washington St shared street	Bike boulevard from Middle St to Washington St provides low-stress alternative and completes E-W bike route with State St bike boulevard. Shared street from Washington St to Marcy St with raised intersection on Marcy St. Connection to Museum and Prescott Park.	Court St	Middle St	Marcy St

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
38	Spot	6A/B:Downtown/ West End, 5A/B:South	Low	Court St bike boulevard, Washington St shared street	Construct raised intersection with shared street on Court St for bicyclist- and pedestrian-prioritized connection to and from park and museum.	Marcy St	Court St	NA
38	Spot	6A/B:Downtown/ West End, 5A/B:South	Low	Court St bike boulevard, Washington St shared street	Remove southern leg of intersection. Construct park in front of church with reclaimed roadway space.	Court St	Middle St	NA
39	Bike	6B:Downtown/West End	Med	State St bike boulevard downtown connectivity	Bike lanes on Fleet St from State St to Court St connect to bike boulevard on Court St. Contraflow bike lane on State St from Middle St to Fleet St required to make connection to overall route. Travel lane reduction, removal of splitter island, and bike signal may be required.	State St, Fleet St	Middle St	Washington St
39	Spot	6A/B:Downtown/ West End	Med	State St bike boulevard downtown connectivity	Add bike signal with installation of contraflow bike lane on State St to move bicyclists through intersection of Middle Rd and State St in the reverse direction of motor vehicle traffic.	State St	Middle St	NA
39	Spot	6A/B:Downtown/ West End	Med	State St bike boulevard downtown connectivity	Remove splitter island on State St to facilitate installation of contraflow bike lane and direct westbound crossing of Middle Rd.	State St	Middle St	NA
40	Bike	6B:Downtown/West End	High	State St bike boulevard	Bike boulevard with traffic calming at key locations forms east-west route to downtown.	State St, Cass St, Albany St, Brewery Ln, Jewell Ct	Islington St	Middle St
40	Ped	6A:Downtown/West End	High	State St bike boulevard	Add sidewalks to one side on Jewell Ct from Islington St to Brewery Ln. Add sidewalks to one side on Albany St from Brewery Ln to Cass St. Widen sidewalks on Brewery Ln.	Albany St, Brewery Ln, Jewell Ct	Bartlett St	Islington St
40	Spot	6A/B:Downtown/ West End	High	State St bike boulevard	Install ADA-compliant crosswalk perpendicular to roadway.	State St	Winter St	NA
41	Spot	5A/B:South	Low	North-south connection to Little Harbour School	Construct curb extensions with ADA-compliant crosswalks on north side for visibility of pedestrians leaving park.	Rockland St	Leary Field Path	NA

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
41	Bike/Ped	5A/B:South	Low	North-south connection to Little Harbour School	Bike boulevard on Rogers St and Elwyn Ave. Widen existing path in Leary Field. Utility coordination may be required.	Elwyn Ave, Leary Field Path, Rogers St	South St	Court St
42	Bike	5B:South	Med	Lincoln Ave bike boulevard	Bike boulevard with traffic calming at key locations forms important east-west neighborhood route and connection to Little Harbour School.	Lincoln Ave, Park St, Mendum Ave	Middle St	Junkins Ave
42	Spot	5A/B:South	Med	Lincoln Ave bike boulevard	Add actuated signal at Miller Ave to enhance safety of crossing.	Lincoln Ave	Miller Ave (Rte 1A)	NA
43	Spot	6A/B:Downtown/ West End	Low	Neighborhood connection to Hampton Branch Trail	Add actuated signal with ADA-compliant crosswalks to make low-stress crossing for bike boulevard.	Middle St.	Mendum Ave	NA
43	Bike/Ped	6A/B:Downtown/ West End	Low	Neighborhood connection to Hampton Branch Trail	Bike boulevard completes connection from Lincoln Ave bike boulevard to Islington/ Hampton Branch Trail. Add sidewalks on two sides where not existing. In conjunction with bike boulevard project to make bike/pedestrian priority street.	Thaxter Rd, Boss Ave, Lawrence St	Islington St	Middle St
44	Bike	6B:Downtown/West End, 4B:Greenland/ Borthwick	Med	Hampton Branch Trail connection via Islington St	Add bike lanes from Barberry Ln to Thaxter Rd with consolidation of parking to one side where an abundance of off-street parking exists.	Islington St	Barberry Ln	Thaxter Rd
44	Ped	6A:Downtown/West End, 4A:Greenland/ Borthwick	Med	Hampton Branch Trail connection via Islington St	Add sidewalk on south side of Islington St bridge over Route 1 per reconstruction project currently in progress.	Islington St	Barberry Ln	Thaxter Rd
45	Bike/Ped	6A/B:Downtown/ West End	Low	Connection from Middle Rd to Islington St	Existing CIP project. Add sidewalks to one-side of Spinney Road. Add shared-lane markings for project extent.	Spinney Rd	Islington St	Middle Rd
46	Bike	4B:Greenland/ Borthwick	Low	Hampton Branch Trail connection from South Rd	Bike boulevard with traffic calming to discourage cut-through vehicular traffic.	Barberry Ln, Sheffield Rd, Melbourne St, Rutland St	Hampton Branch Trail	Middle Rd
47	Spot	4A/B:Greenland/ Borthwick	Med	Islington neighborhood access	Narrow intersection, remove slip lane on Barberry Ln to simplify crossing.	Barberry Ln	Islington St	NA

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
47	Bike/Ped	4A/B:Greenland/ Borthwick	Med	Hampton Branch Trail to Hospital Connection	Add signed bicycle route and sidewalk one side on Barberry Ln from Islington St to end. Use existing easement and ROW acquisition to construct shared-use path to Borthwick Ave. Alternative connection to WBBX Rd. to Borthwick Ave path connection.	Barberry Ln, Hampton-Borthwick Path Connector	Borthwick Ave	Islington St
48	Bike	6B:Downtown/West End, 1B:North	Med	North-south connection to Islington St	Consolidate parking to one side north of Woodbury Ave and add bike lanes. Shared-lane markings complete the tight connection under the rail bridge. Shared-lane markings from Bartlett St to Thaxter Rd provide additional connectivity.	Bartlett St, Islington St	Thaxter Rd	Dennett St
49	Spot	1A/B:North	High	Cate St connectivity	Allow pedestrian and bicycle access through gates at all times, short term, before Cate St relocation. Do not allow plowed snow to block access in winter.	Cate St	NA	NA
49	Bike/Ped	1A/B:North	High	Cate St connectivity	Add bike lanes and sidewalks on two sides of Cate St and relocated Cate St to be constructed with ROW acquisition or easement and redesign/reconstruction of Cate St.	Cate St, Relocated Cate St	Bartlett St	Route 1 Bypass
50	Bike	4B:Greenland/ Borthwick, 3B:Pease	Med	Route to Pease	Bike lanes on Sherburne Rd and Greenland Rd. Signed route on Sherburne Rd north of Country Club Rd. directing users to Grafton Rd Trail/Pease	Sherburne Rd, Greenland Rd	Borthwick Ave	Grafton Dr Trail
50	Ped	4A:Greenland/ Borthwick, 3A:Pease	Med	Route to Pease	Reconstruct sidewalks on Greenland Rd currently in disrepair. Move unsafe crosswalk from corner of Greenland Rd and Borthwick Ave to a more visible location. Remove slip lane from NH 33, extend path from pedestrian bridge and add 90 degree crossing at improved intersection.	Greenland Rd	Sherburne Rd	Harvard St
50	Ped	4A:Greenland/ Borthwick, 3A:Pease	Med	Route to Pease	Add sidewalk on one side of Sherburn Rd where non-existent for improved connectivity.	Sherburne Rd	Country Club Rd	Grafton Dr Trail

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
50	Spot	4A/B:Greenland/ Borthwick, 3A/B:Pease	Med	Route to Pease	Existing crosswalk forces pedestrians to cross road where vehicles have limited sight lines. Remove existing crosswalk, extend sidewalk on south to Greenland Rd intersection and replace crosswalk there (with intersection realignment).	Borthwick Ave	Greenland Rd Pedestrian Bridge	NA
50	Spot	4A/B:Greenland/ Borthwick, 3A/B:Pease	Med	Route to Pease	Add actuated signal and ADA-compliant crossing for bicycle and pedestrian trail access.	Grafton Dr	Sherburne Rd	NA
50	Spot	4A/B:Greenland/ Borthwick, 3A/B:Pease	Med	Route to Pease	Remove right-turn slip lane from Greenland Rd turning on to Borthwick Ave. Slip lane complicates intersection and allows motorists to turn at high speeds.	Borthwick Ave	Greenland Rd	NA
51	Bike/Ped	3A/B:Pease	High	Grafton Dr Trail Connectivity	Shared-use path on closed portion of Country Club Rd to Grafton Dr. Shared-use path shortcut from Country Club Rd to Transportation Center through utility corridor.	Grafton Dr	Country Club Rd	NA
51	Spot	3A/B:Pease	High	Grafton Dr Trail Connectivity	Add actuated signal and ADA-compliant crossing for bicycle and pedestrian trail access.	Grafton Dr	Country Club Rd	NA
51	Spot	4A/B:Greenland/ Borthwick, 3A/B:Pease	High	Grafton Dr Trail Connectivity	Add ADA-compliant crosswalks, to cross pedestrians to existing sidewalk on east side in order to cross bridge.	Sherburne Rd	Country Club Rd	NA
52	Bike/Ped	3A/B:Pease	Med	Greenland route to Pease/ downtown	Connect existing paths with sidepath on south side of Corporate Dr. Reconstruct and widen existing asphalt sidewalks to meet sidepath standards.	Corporate Dr	Grafton Dr Trail	Ashland Rd Shared-use Path
53	Bike/Ped	3A/B:Pease	Med	Pease improvements	Sidepath from Ashland Rd to New Hampshire Ave for low-stress commuter access. Reconstruct and widen existing sidewalks to meet sidepath standards.	Corporate Dr, Manchester Sq	Ashland Rd Shared-use Path	New Hampshire Ave
54	Bike/Ped	3A/B:Pease	Med	Pease improvements	Sidepath from New Hampshire Ave to Airport for low-stress access. Reconstruct and widen existing sidewalks to meet sidepath standards.	Exeter St	New Hampshire Ave	Airport
55	Spot	3A/B:Pease	High	Pease improvements	Add ADA-compliant crosswalk for bus stop access with installation of sidewalk or sidepath on both sides of road.	New Hampshire Ave	Stratham St	NA

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
55	Bike/Ped	3A/B:Pease	High	Pease improvements	Sidepath from Pease Blvd to existing trail on Grafton Dr for low-stress commuter access. Reconstruct and widen existing asphalt sidewalks to meet sidepath standards.	New Hampshire Ave	Pease Blvd	Grafton Dr Trail
56	Bike/Ped	3A/B:Pease	Med	Pease improvements	Sidepath from Ashland Rd to New Hampshire Ave for low-stress commuter and business access. Reconstruct and widen existing sidewalks to meet sidepath standards.	International Dr	Corporate Dr	New Hampshire Ave
57	Bike/Ped	3A/B:Pease	Med	Pease improvements	Sidepath from Corporate Dr to Pease Blvd for low-stress commuter access. Reconstruct and widen existing sidewalks to meet sidepath standards.	International Dr	Corporate Dr	Pease Blvd
58	Bike/Ped	3A/B:Pease	Med	Pease to Woodbury Ave connection	Sidepath on south side of Pease Blvd to Spaulding Tpk exit ramps.	Pease Blvd	Gosling Rd, Spaulding Tpk	New Hampshire Ave
59	Spot	1A/B:North	High	Pease to Woodbury Ave connection	Add actuated pedestrian signal near Winsor Rd with ADA-compliant crosswalk.	Pease Blvd	Winsor Rd	NA
59	Bike/Ped	1A/B:North	High	Pease to Woodbury Ave connection	Remove travel lane and/or median for two-way cycle track on south side of road from Woodbury Ave to Spaulding Tpk ramps. Install sidewalks on both sides in conjunction with cycle track reconstruction.	Gosling Rd	Woodbury Ave	Pease Blvd, Spaulding Tpk
60	Bike/Ped	1A/B:North	High	Woodbury Ave Complete Street reconstruction	Cycle track one-way each side for access to shopping and residential areas. Short term, may be street-level with flexible bollard separation; long term, full reconstruction with permanent separation. Lane narrowing and/or travel lane reduction require. Reconstruct and widen sidewalks on two sides for improved and ADA access to shopping and transit. Short term, make all crosswalks ADA-compliant. Long term, reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Woodbury Ave	Market St	Gosling Rd

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
60	Spot	1A/B:North	High	Woodbury Ave Complete Street reconstruction	Short term, make all crosswalks ADA-compliant. Ensure that pedestrian signal timing is long enough to accommodate slow crossing speeds. Long term, reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Woodbury Ave	Arthur F Brady Dr	NA
60	Spot	1A/B:North	High	Woodbury Ave Complete Street reconstruction	Short term, make all crosswalks ADA-compliant. Ensure that pedestrian signal timing is long enough to accommodate slow crossing speeds. Long term, reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Woodbury Ave	Commerce Way	NA
60	Spot	1A/B:North	High	Woodbury Ave Complete Street reconstruction	Short term, make all crosswalks ADA-compliant. Ensure that pedestrian signal timing is long enough to accommodate slow crossing speeds. Long term, reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Woodbury Ave	Durgin Ln	NA
60	Spot	1A/B:North	High	Woodbury Ave Complete Street reconstruction	Short term, make all crosswalks ADA-compliant. Ensure that pedestrian signal timing is long enough to accommodate slow crossing speeds. Long term, reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Woodbury Ave	Market St	NA
61	Bike/Ped	1A/B:North	High	Market St Gateway connection	Sidepath completes link from downtown to shopping on Woodbury Ave. Provides residents along Market St connections to downtown and shopping.	Market St	Woodbury Ave	I-95
62	Bike	1B:North	Low	Woodbury Ave connectivity improvements	Signed route on Granite St from existing pedestrian bridge over Market St. Bike lanes through travel lane narrowing (lane diet) on Woodbury Ave from Granite St to Market St.	Woodbury Ave, Granite St	Market St Pedestrian Bridge	Market St

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
63	Spot	1A/B:North	High	Woodbury Ave connectivity reconstruction	Realign to single right-of-way, remove northern fork of Maplewood Ave and add pocket park in reclaimed roadway space connecting to existing splitter island.	Maplewood Ave	Woodbury Ave	NA
63	Bike/Ped	1A/B:North	High	Woodbury Ave connectivity reconstruction	Full reconstruction and road widening within existing ROW permits bike lanes and sidewalks on one-side for high-demand route. Parking reductions may be necessary (off-street residential parking exists).	Woodbury Ave	Rockingham Ave	Granite St
64	Bike	1B:North	High	Downtown to Pease low-stress connectivity improvements	Restripe existing non-standard bike lane as buffered bike lane. Long term, upgrade to cycle track with flexposts or more permanent separation.	Woodbury Ave	Dennett St	Rockingham Ave
64	Spot	1A/B:North	High	Downtown to Pease low-stress connectivity improvements	Add pedestrian-scale lighting under bridge for visibility at night.	Woodbury Ave	I-95 Ramp	NA
65	Bike	1B:North	High	Downtown to Pease low-stress connectivity improvements	Bike boulevard with traffic calming for low-stress connection to Pease and New Franklin School. Vegetated chicanes and mini traffic circles would slow traffic on this long, straight road.	Dennett St	Maplewood Ave	Woodbury Ave
65	Spot	1A/B:North	High	Downtown to Pease low-stress connectivity improvements	Add actuated signal to enable low-stress crossing of Woodbury Ave for bicyclists and pedestrians. High volume and speed of vehicular traffic currently creates difficult crossing.	Dennett St	Woodbury Ave	NA
65	Spot	1A/B:North	High	Downtown to Pease low-stress connectivity improvements	Add curb extensions and ADA-compliant crosswalks with construction of bike boulevard on Dennett St. Safe Route to New Franklin School.	Dennett St	Stark St	NA
66	Bike/Ped	1A/B:North	Med	Low-stress route from Market St to Pease	Bike boulevard with traffic calming at key locations provide central east-west link from Pease to Market St. Add sidewalk on one side for extent of bike boulevard.	Edmond Ave, Sapphire St, Rockingham Ave	Woodbury Ave	Maplewood Ave

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
67	Bike	1B:North	Med	Meadow Rd bike boulevard	Signed route and new shared-use path on existing ROW provide low-stress parallel route to Woodbury Ave.	Echo Ave, Farm Ln, Hillcrest Dr, Longmeadow Ln, Meadow Rd, Rockingham Ave, Shared-use path connection	Rockingham Ave	Woodbury Ave
68	Bike	3B:Pease	Low	Pease connectivity improvements	Signed routes on Rye St and Oak Ave connect between proposed sidepaths.	Rye St, Oak Ave	Corporate Dr	International Dr
68	Ped	3A:Pease	Low	Pease connectivity improvements	Add sidewalk on one side where non-existent for improved connectivity.	Rye St, Oak Ave	Corporate Dr	International Dr
69	Bike	6B:Downtown/West End	Low	Russell St and Deer St improvements	Bike lanes with travel lane narrowing (lane diet) on Russell St and Deer St. Shared-lane markings on narrow portion of Deer St from Russels St to Market St.	Russell St, Deer St	Market St	Maplewood Ave
69	Spot	6A/B:Downtown/ West End	Med	Russell St and Deer St improvements	Reduce turning radii to reduce crossing distance, add curb extensions and ADA-compliant crosswalks.	Russell St	Deer St	NA
70	Bike/Ped	6A/B:Downtown/ West End	Med	Pleasant St/ Market Square as bike and pedestrian centerpiece	Shared streets on Market St and Market Sq with raised intersections slow motorists and discourage through traffic. Pedestrian-only plaza on Pleasant St from Congress St to State St provides central location for programmed events, restaurants, and retail. Accomodate or reroute transit service on all streets.	Market St, Pleasant St, Market Sq	State St	Hanover St
70	Spot	6A/B:Downtown/ West End	Med	Pleasant St/ Market Square as bike and pedestrian centerpiece	Raised intersection/shared street environment on Market St from Bow St to Hanover St slows motorists and indicates pedestrian priority at a complex intersection. Consider redeveloping parking lot at the corner of Hanover St and Market St or closing access on Market St, reconfiguring, and moving access to Hanover St to simplify intersection. Accomodate or reroute transit service on all streets.	Market St	Bow St	Hanover St

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
70	Spot	6A/B:Downtown/ West End	Med	Pleasant St/ Market Square as bike and pedestrian centerpiece	Raised intersection/shared street environment on Market Sq from Daniel St to Church St slows motorists and indicates pedestrian priority at a complex intersection with a high volume of pedestrian traffic. Provide well-defined priority space for transit stop and bus traffic. Accomodate or reroute transit service on all streets.	Market Sq	Daniel St	Church St
71	Bike	6B:Downtown/West End, 5B:South	Low	East Coast Greenway connectivity improvements	Shared-lane markings on constrained historic corridor remind motorists that bikes may use the full travel lane. Bike lanes on Pleasant St from State St to Court St provide connection to Court St bike blvd. Convert angle parking to parallel parking and add parallel parking on one-side on that block.	Pleasant St, Marcy St, New Castle Ave	New Castle Line	Porter St
72	Spot	5B:South	High	South St connectivity improvements	Realign and narrow intersection to meet Clough Dr. Add curb extensions.	Clough Dr	South St	NA
72	Bike	5A:South	High	South St connectivity improvements	Bike lanes with reconstruction from Broad St to Clough Dr for school/bike blvd conenctivity. Shared-lane markings for remainder of corridor. Roadway should be designed at minimum dimensions with traffic calming to slow traffic to the posted speed limit of 20 mph.	South St	Marcy St	Lafayette Rd
72	Ped	5A/B:South	High	South St connectivity improvements	Add sidewalk on south side of South St. From Lafayette Rd to Sagamore Ave, narrow roadway to minimum travel lane dimensions and add traffic calming so the posted speed of 20 mph matches the design speed more closely.	South St	Marcy St	Lafayette Rd
73	Bike	5B:South	High	City Hall connectivity improvements	Climbing lanes on entire length of Junkins Ave. Insufficient width for bike lanes on both sides.	Junkins Ave	South St	Pleasant St
73	Ped	5A:South	High	City Hall connectivity improvements	Add sidewalk on one side for improved pedestrian access.	Junkins Ave	Pleasant St	South St

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
73	Spot	5A/B:South	High	City Hall connectivity improvements	Add ADA-compliant crosswalks across City Hall Driveway (both legs) and Junkins Ave with construction of sidewalk on east side of Junkins.	Junkins Ave	City Hall Driveway	NA
73	Spot	5A/B:South	High	City Hall connectivity improvements	Add ADA-compliant crosswalks across Pleasant St with construction and reconstruction of sidewalks on Junkins Ave.	Pleasant St	Junkins Ave	NA
73	Spot	5A/B:South	High	City Hall connectivity improvements	Add curb extensions to increase pedestrian visibility on South St.	Junkins Ave	South St	NA
74	Bike/Ped	5A/B:South	High	Parrott Ave park space	Close Edward St from Parrot Ave Ext. to Junkins Ave and convert ROW to park space. Construct sidepath on south side of Parrott Ave Ext to connect to existing park path for safe route to school and library.	Parrot Ave Ext, Edward St	Junkins Ave	Edward St
75	Bike/Ped	5A/B:South	Low	Route 1B loop improvements	Bike lanes and sidewalks on two sides with reconstruction and road widening to improve high-demand route. Coordination with New Castle needed to extend bicycle and pedestrian facilities for entire route.	Wentworth Rd	Sagamore Ave	Rye Line
76	Bike	4B:Greenland/ Borthwick	Med	WBBX Rd to Borthwick Ave connector	Alternative connection to Barberry Ln/ Borthwick Ave path. Add signed route and sidewalk one side on WBBX Rd from Hampton Branch Trail to dead end. Construct shared-use path with ROW acquisition or easement from end of WBBX Rd to Borthwick Ave.	WBBX Rd, Borthwick Path Connection	Hampton Branch Trail	Borthwick Ave
77	Bike	2B:Lafayette	Low	Banfield Rd reconstruction	Add bike lanes on Banfield Rd with road widening to provide increased access to the Hampton Branch Rail Trail for neighborhoods on Ocean Rd.	Banfield Rd	Hampton Branch Trail	Ocean Rd
78	Bike/Ped	2A/B:Lafayette	High	Public Works Department sewer easement shared-use path	Add shared-use path along existing easement to provide an alternative route to Lafayette Rd.	Public Works Department sewer easement	Hoover Dr	Heritage Ave
79	Bike	6B:Downtown/West End, 1B:North	High	Maplewood Ave improvements	Existing project. Restripe existing bike lanes as buffered bike lanes where feasible. Lane and parking width reduction may be required.	Maplewood Ave	Rail Crossing	Dennett St

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
79	Ped	6A:Downtown/West End, 1A:North	High	Maplewood Ave improvements	Reconstruct sidewalks on two sides. Construct sidewalks on one side of bridge.	Maplewood Ave	Rail Crossing	Dennett St
80	Bike/Ped	5A/B:South	Med	South Mill Pond Path	Formalize and upgrade existing path as a shared-use path.	South Mill Pond Path	Junkins Ave	Parrott Ave
81	Bike/Ped	6A/B:Downtown/ West End, 1A/B:North	Low	North Mill Pond Path	Construct shared-use path along south bank of North Mill Pond, per 1997 North Mill Pond Study. This path may serve as an alternative route to the Portsmouth Newington Branch Rail with Trail	North Mill Pond Path	Bartlett St	Maplewood Ave
82	Bike/Ped	4A/B:Greenland/ Borthwick	High	Hampton Branch Trail, Phase 1	Major regional trail connection, existing CIP project, pending State acquisition of former rail ROW. Trail provides long distance route from Hampton to Portsmouth.	Hampton Branch Trail	NH 33	Barberry Ln
82	Spot	4A/B:Greenland/ Borthwick, 2A/B:Lafayette	High	Hampton Branch Trail, Phase 1	Trail access location, short-term trail terminus, potential location for off-street parking	Hampton Branch Trail	Barberry Ln	NA
82	Spot	4A/B:Greenland/ Borthwick, 2A/B:Lafayette	High	Hampton Branch Trail, Phase 1	Trail access location with parking at new Rec Field	Hampton Branch Trail	New Rec Field	NA
82	Spot	4A/B:Greenland/ Borthwick, 2A/B:Lafayette	High	Hampton Branch Trail, Phase 1	Trail access location	Hampton Branch Trail	WBBX Rd	NA
83	Bike	1A/B:North	High	Sarah Mildred Long Bridge/ Route 1B Bike Lanes	Construct sidepath on north side of bridge. If sidepath is not feasible, narrow travel lanes to add bike lanes on both sides of Sarah Mildred Long Bridge/Route 1 Bypass. Add sidewalk to north side.	Sarah Mildred Long Bridge	Albacore Museum Access Rd	Bridge St, Kittery
109	Ped	6A:Downtown/West End, 1A:North	Low	Bartlett St improvements	Add sidewalk on one side to enhance connection on this high demand route to Islington St.	Bartlett St	Islington St	Woodbury Ave
110	Ped	6A:Downtown/West End	Med	Islington St Corridor Plan	Existing plan. Reconstruct and enhance sidewalks to develop a more vibrant retail area. Construct curb extensions and enhanced crosswalks at key intersections.	Islington St	Maplewood Ave	Spinney Rd
110	Spot	6A/B:Downtown/ West End	Med	Islington St Corridor Plan	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Cabot St	NA
110	Spot	6A/B:Downtown/ West End	Med	Islington St Corridor Plan	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Cass St	NA

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
110	Spot	6A/B:Downtown/ West End	Med	Islington St Corridor Plan	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Columbia St	NA
110	Spot	6A/B:Downtown/ West End	Med	Islington St Corridor Plan	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Cornwall St	NA
110	Spot	6A/B:Downtown/ West End	Med	Islington St Corridor Plan	Existing plan. Realign intersection to connect directly with Jewell Ct.	Bartlett St	Islington St	NA
110	Spot	6A/B:Downtown/ West End	Med	Islington St Corridor Plan	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Rock St	NA
110	Spot	6A/B:Downtown/ West End	Med	Islington St Corridor Plan	Existing plan. Align Spinney Rd to 90 degree intersection with Islington St.	Islington St	Spinney Rd	NA
110	Spot	6A/B:Downtown/ West End	Med	Islington St Corridor Plan	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Summer St	NA
110	Spot	6A/B:Downtown/ West End	Med	Islington St Corridor Plan	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Tanner St	NA
113	Ped	4A:Greenland/ Borthwick	Med	Islington neighborhood access	Add sidewalk on south side to connect to existing sidewalk at Portsmouth Plains Field.	Islington St	Plains Ave	Essex Ave
115	Spot	2A/B:Lafayette, 5A/B:South	Med	Greenleaf Ave improvements	Add crosswalks, ramps, and pedestrian signal. Realign intersection to 90 degree to improve visibility for pedestrians, bicyclists, and motorists.	Lafayette Rd	Greenleaf Ave	NA
116	Ped	5A:South	High	Library and Middle School improvements	Construct sidewalks on two sides on Parrott Ave where non-existent.	Parrott Ave	Junkins Ave	Leary Field Path
116	Spot	5A/B:South	High	Library and Middle School improvements	Reduce curb radii and add curb extensions for safer travel to Library and Middle School.	Junkins Ave	Parrot Ave	NA
116	Spot	5A/B:South	High	Library and Middle School improvements	Reduce curb radius on east side of Rogers St.	Rogers St	Parrot Ave	NA
116	Spot	5A/B:South	High	Library and Middle School improvements	Realign crosswalk perpendicular to roadway in order to shorten crossing distance.	Parrott Ave	Rogers St	NA
118	Ped	5A:South	High	City Hall accessibility improvements	Add sidewalk on one side where missing for pedestrian access. Ensure all crosswalks are ADA-compliant.	City Hall Driveway	Junkins Ave	Junkins Ave

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
118	Spot	5A/B:South	High	City Hall accessibility improvements	Make all crosswalks ADA-compliant and perpendicular to roadway.	City Hall Driveway	NA	NA
120	Ped	5A:South	Med	Safe route to Little Harbour School	Add sidewalks on two sides for pedestrian access to school.	Brackett Rd, Brackett Ln	Haven Rd, South St	Brackett Rd Path
120	Spot	5A/B:South	Med	Safe route to Little Harbour School	Decrease turning radius on southwest corner of intersection. Install ADA-compliant crosswalk (tactile warning strip and connecting sidewalk facility needed).	Brackett Rd	Clough Dr	NA
121	Ped	5A:South	Med	Strawberry Banke Museum connectivity and accessibility improvements	Reconstruct and widen sidewalk on Museum side for ADA compliance and improved access on high-demand route.	Marcy St	Hancock St	Strawberry Banke Museum Parking Lot
121	Ped	5A:South	High	Strawberry Banke Museum connectivity and accessibility improvements	Construct sidewalk along edge of parking lot to connect Museum entrance to existing sidewalk on Hancock St.	Strawberry Banke Museum Driveway	Hancock St	Strawberry Banke Museum Entry
121	Spot	5A/B:South	Med	Strawberry Banke Museum connectivity and accessibility improvements	Add ADA-compliant crosswalks across Mechanic and Marcy Streets for Prescott Park and Museum access.	Marcy St	Mechanic St	NA
121	Spot	5A/B:South	Med	Strawberry Banke Museum connectivity and accessibility improvements	Add ADA-compliant crosswalks across Marcy St for Prescott Park and Museum access with reconstruction of sidewalk.	Marcy St	Strawberry Banke Museum	NA
122	Ped	6A:Downtown/West End	Low	Downtown pedestrian and retail enhancement	Widen sidewalk and convert pull-in parking to parallel parking at curb from Penhallow St to Chapel St. Additional space provides for outdoor seating and retail uses. Widen sidewalk on north side of Bow St at Market St to provide ADA-compliant alternative to current stair-only access.	Bow St	Market St	Chapel St

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
123	Ped	6A:Downtown/West End	Low	Downtown pedestrian and retail enhancement	Widen sidewalk and convert pull-in parking to parallel parking at curb. Additional space for high-pedestrian volume and outdoor seating and retail uses.	Congress St	Fleet St	Church St
125	Ped	1A:North	Med	Safe route to New Franklin School	Add sidewalks on one side on Central Ave and Myrtle Ave approaching school.	Myrtle Ave, Central Ave	Maplewood Ave	New Franklin School
125	Bike/Ped	1A/B:North	Med	Safe route to New Franklin School	Add sidepath on one side of Frankin Dr.	Franklin Dr,	Woodbury Ave	Maplewood Ave, Route 1 Bypass
126	Ped	1A:North	Low	Safe route to New Franklin School	Reconstruct sidewalk on Stark St bridge in major disrepair. Add sidewalk on one side with bridge reconstruction.	Stark St	Dennett St	New Franklin School
128	Ped	1A:North	Low	Rockingham Ave improvements	Add sidewalk on north side of Rockingham Ave to Woodbury Ave. High speed motor vehicle traffic connection to Spaulding Tpk.	Rockingham Ave	Pease Shared-Use Path	Meadow Rd
132	Ped	4A:Greenland/ Borthwick	Low	Griffin Rd pedestrian access	Add sidewalk to south side of road for neighborhood and job access.	Griffin Rd	Greenland Rd	End
135	Ped	2A:Lafayette	Med	Longmeadow Rd neighborhood connectivity	Add sidewalk on one side to Longmeadow Rd, and Lang Rd from Beechstone Ave to Lafayette Rd for neighborhood access to Lafayette Rd.	Longmeadow Rd, Lang Rd	Lafayette Rd	Beechstone Ave
135	Spot	2A/B:Lafayette	Low	Lang Rd and Longmeadow Rd intersection improvements	Add ADA-compliant crosswalk with construction of sidewalks on future intersection of Lang Rd and Longmeadow Rd for neighborhood access.	Lang Rd	Longmeadow	NA
136	Ped	2A:Lafayette	High	Safe route to Community Campus	Add sidewalks on two sides for school access.	Campus Dr	Lafayette Rd	End
137	Ped	2A:Lafayette	High	Wilson Rd transit access	Add sidewalks on two sides to make transit stops ADA compliant and separated from roadway.	Wilson Rd, Market Basket Plaza Driveway	Lafayette Rd	West Rd
137	Spot	2A/B:Lafayette	High	Wilson Rd transit access	Add ADA-compliant crosswalk with construction of sidewalk on Wilson Rd to connect bus stops to retail.	Wilson Rd	Lafayette Rd	NA

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
201	Spot	1A/B:North	Med	Neighborhood access improvements	Ensure pedestrian and bicycle access through gates. Do not allow plowed snow to block access in winter.	Dunlin Way	Blue Heron Dr	NA
201	Spot	1A/B:North	Med	Neighborhood access improvements	Ensure pedestrian and bicycle access through gates. Do not allow plowed snow to block access in winter.	Shearwater Dr	Blue Heron Dr	NA
201	Spot	1A/B:North	Med	Neighborhood access improvements	Ensure pedestrian and bicycle access through gates. Do not allow plowed snow to block access in winter.	Mangrove St	Spinnaker Way	NA
203	Spot	3A/B:Pease	Low	Grafton Dr Trail transit connectivity	Add ADA-compliant crosswalk to access bus stop on south side of Grafton Dr between Aviation Ave and Corporate Drive.	Grafton Dr	Office Driveway	NA
205	Spot	6A/B:Downtown/ West End	Med	State St improvements	Add curb extensions to reduce crossing distances and increase pedestrian visibility.	State St	Fleet St	NA
207	Spot	6A/B:Downtown/ West End	Med	Chatham St and Summer St intersection improvements	Narrow intersection. Replace angled parking with parallel on-street parking. Reclaim wide asphalt space in front of church and extend the church plaza, adding a southern curbline to Chatham St.	Chatham St	Summer St	NA
208	Spot	5A/B:South	Med	Richards Ave and Parrott Ave intersection improvements	Construct curb extensions with ADA-compliant crosswalks.	Richard Ave	Parrot Ave	NA
210	Spot	6A/B:Downtown/ West End	Med	Safe route to St. Patrick school	Add curb extensions for pedestrian visibility at Summer St.	Austin St	Summer St	NA
211	Spot	6A/B:Downtown/ West End	Low	Safe route to St. Patrick school	Add ADA-compliant crosswalks to all legs of intersection.	Austin St	Union St	NA
214	Spot	5A/B:South	Low	Marcy St at South St intersection improvements	Align South St to 90 degrees with Marcy St. Use reclaimed roadway space to increase pocket park size on north side of new intersection.	Marcy St	South St	NA
215	Spot	5A/B:South	Low	Peirce Island Rd at Mechanic St intersection improvements	Narrow intersection with curbs and sidewalks on Mechanic St. Add ADA-compliant crosswalks across Mechanic St and Peirce Island Rd for park access.	Peirce Island Road	Mechanic St	NA

Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To
216	Spot	5A/B:South	Med	Pleasant St at Livermore St intersection improvements	Add ADA-compliant crosswalks across Pleasant St for access to Haven Park.	Pleasant St	Livermore St	NA
218	Spot	5A/B:South	Med	Brackett Rd path lighting	Add pedestrian-scale lighting to pathway to provide additional light from dusk to dawn.	Brackett Rd Path	Clough Dr	NA

Chapter Four
NON-INFRASTRUCTURE RECOMMENDATIONS

5 E's

The non-infrastructure recommendations in the Bicycle and Pedestrian Master Plan will help to foster a culture and environment that will help to increase walking and bicycling in Portsmouth and make it safer.

The recommendations are categorized into five categories:

- **Education**
  Opportunities to inform the public and city staff about walking and bicycling safety and design.
- **Encouragement**
  Programs, events, and policies that can make walking and bicycling popular ways of getting around for people of all ages and abilities.
- **Enforcement**
  Opportunities to improve compliance with walking and bicycling laws and policies.
- **Engineering**
  Citywide policies and initiatives to improve walking and bicycling conditions along streets, sidewalks, and paths in Portsmouth.
- **Evaluation**
  Ways to assess the impact of policies and measure the progress towards increasing walking and bicycling in Portsmouth.

The League of American Bicyclists and the Pedestrian and Bicycle Information Center promote use of all E's to foster a walk-friendly or bike-friendly community. These programs and policies build on each other to approach walking and bicycling improvements in a holistic way.

The Bicycle and Pedestrian Master Plan non-infrastructure recommendations range in scale and complexity. These recommendations can be implemented as standalone projects and can be selected as interest and opportunity dictates.

5 E's

Education

Encouragement

Enforcement

Engineering

Evaluation

NON-INFRASTRUCTURE PRIORITIZATION CRITERIA

Prioritization criteria for non-infrastructure recommendations are slightly different than criteria for infrastructure recommendations due to the nature of the recommendations. The recommendations of this plan were prioritized based on the following criteria. Each recommendation was given a score for each of the following categories and then sorted into high, medium, and low priorities, based on an overall score. Safety and Connectivity scores are weighted in the overall score. Note that a high overall score may not reflect a high score for each criteria. The detailed scoring table can be found in Appendix 4. Details on the implementation process can be found in Chapter 5.

Safety
Scores in this criteria rate each recommendation's impact on safety of walking and bicycling conditions. Programs such as safety education or speed enforcement received a high rating. Maintaining signage and infrastructure to current standards received medium ratings. Recommendations with no direct relationship to safety received a low score.

Equity
Scores for equity reflect each recommendation's impact on vulnerable or choice-limited users. Vulnerable users include children, seniors, or people with disabilities who may be slower or have mobility or sensory limitations. Choice-limited users include people who have limited transportation options due to financial, geographic, or physical constraints. Recommendations such as Safe Routes to School or snow clearance received high scores; recommendations that indirectly address equity such as increasing transportation choices received medium scores; recommendations with little direct impact on equity received a low score.

Feasibility
Feasibility scores reflect organizational or technical barriers to implementation. A high scoring recommendation can be completed with the lead department's existing technical capacity, such as updating street signage. A medium score requires outside technical assistance or organizational coordination between jurisdictions or public-private collaborations. A low score requires both technical assistance and coordination between multiple parties.

Opportunity
Opportunity scores reflect the recommendation's alignment with existing programs or projects. A high score indicates that the recommendation already exists and should be promoted or continued, such as special bicycling events (Portsmouth Criterium). A medium score indicates a planned recommendation, such as walk audits, or previously implemented program,such as public forums on Complete Streets. A low score indicates a recommendation for a new, unplanned program or policy.

Lifecycle Cost
Lifecycle costs reflect the recommendation's implementation and maintenance costs. A high score requires mainly labor to implement and maintain, such as conducting bike counts. A medium score requires mainly capital to implement and maintain, such as providing bike maintenance classes. A low score requires both labor and capital expenditures to implement and maintain, such as adding countdown pedestrian signals at all signalized intersections.

PRIORITIZATION CRITERIA APPLIED TO NON-INFRASTRUCTURE RECOMMENDATIONS

	High	Medium	Low
Safety	Direct impact on safety	Indirect impact on safety	Little impact on safety
Equity	Primary focus is vulnerable or choice-limited users	Indirect impact for vulnerable or choice-limited users	Little impact for vulnerable or choice-limited users
Feasibility	No known organizational or technical barriers	Either an organizational or technical barrier (but not both)	Both organizational and technical barriers
Opportunity	Existing program or policy	Planned or previously implemented program or policy	No known existing or planned program or policy
Lifecycle Cost	Requires mainly labor to implement and maintain	Requires mainly capital expenditures to implement and maintain	Requires both labor and capital expenditures to implement and maintain

EDUCATION

Priority	Recommendation	Associated City Dept
High	**Provide bicycle safety classes for children.** Schools should offer bicycle safety courses as part of the Safe Routes to School program or through other programming. Courses should instruct children how to ride a bicycle, complete a bicycle safety check, safe riding skills, and the rules of the road.	School Dept
High	**Provide bicycle safety classes for adults.** Classes should include education on safe riding skills, bicycle safety checks, rules of the road for bicyclists, and bicycle facilities and infrastructure.	Planning Dept
Med	**Provide education and training to staff on bicycle and pedestrian planning and engineering.** These may include online or in person training from Association of Pedestrian and Bicycle Professionals, Pedestrian and Bicycle Information Center, American Planning Association, Institute of Transportation Engineers, or other organizations.	Planning Dept
Med	**Provide education and ongoing training to law enforcement personnel on bicycle and pedestrian rights and responsibilities.** These may include online or in person training from Association of Pedestrian and Bicycle Professionals, Pedestrian and Bicycle Information Center, American Planning Association, Institute of Transportation Engineers, or other organizations.	Police Dept
Med	**Provide bike maintenance classes for kids and adults.** Bicycle maintenance classes provide basic skills to casual riders to maintain bicycles for transportation and recreation, making bicycling accessible to more people.	Planning Dept
Med	**Develop informational brochure on bicycling rules and responsibilities.** These brochures can be distributed to realtors/ businesses/schools/city departments to provide information and education about bicycle facilities, laws, and safe riding.	Planning Dept

ENCOURAGEMENT

Priority	Recommendation	Associated City Dept
High	**Promote Safe Routes to School program.** Safe Routes to School participation can take the form of organizing annual walk events (such as International Walk to School Day), data collection, walking school buses, bike trains, walking and bicycling curricula, and monthly walk to school events.	School Dept
Med	**Apply for Walk- and Bike- Friendly Community designations.** Walk- and Bike-Friendly Community designations can be earned from the League of American Bicyclists and the Pedestrian and Bicyclist Information Center.	Planning Dept
Med	**Promote / Expand Commuter Choice Program.** Businesses should be asked through development agreements or voluntary programs to promote commuting options for employees. Programs may include incentives for walking and bicycling, a guaranteed ride home program, flexible hours, or other programs to encourage employees to include walking or bicycling in their commutes. Businesses can join the new Commute SMART Seacoast TMA to take advantage of their emergency ride home program and other tools and resources.	Planning Dept
Med	**Review City ordinances related to bicycle registration and parking.** Ordinances should encourage bicycling and protect bicycles and bicyclists rather than discourage use.	City Council
Med	**Organize regular walking groups.** The Senior Services Center holds regular walking groups for seniors. The City and other organizations should expand walking groups around other demographics, geographic location, or interests (e.g. mom & baby, Pease lunchtime walks, Strawberry Banke weekly walks, seniors walk with kids to school).	Planning Dept
Med	**Create bike parking ordinance for new developments.** New developments should be encouraged or required to provide bicycle parking onsite. Refer to the Association of Bike and Pedestrian Professional (APBP) guide to bike parking.	Planning Dept
Low	**Consider accommodations for other non-motorized modes on downtown streets and sidewalks.** City ordinances may be modified to permit skateboards, scooters, and other nonmotorized vehicles on sidewalks in downtown Portsmouth, as appropriate for non-motorized mode speeds.	Planning Dept

ENCOURAGEMENT

Priority	Recommendation	Associated City Dept
Low	**Organize special bicycling events.** These may include the popular Portsmouth Criterium, a cyclovia event (where streets are closed to vehicular traffic), midnight bicycle rides, Bike to Work day, or other events that celebrate bicycling encourage participation, and enhance the visibility of bicycling.	Planning Dept
Low	**Organize regular bicycling groups.** Two bike shops host regular recreational bicycling groups. These should be publicized and expanded as a way to introduce new people to bicycling and increase the visibility of bicycling in Portsmouth.	Planning Dept
Low	**Include walking, bicycling, and transit directions on business websites and brochures.** These directions will help people, especially those not familiar with Portsmouth, know their transportation options and will increase the visibility of walking and bicycling in Portsmouth.	Planning Dept
Low	**Install bike racks on all COAST buses**. Continue program of rack installation and maintenance. Bring racks to community events for people to try out and learn how to use.	Planning Dept
Low	**Create bench, planter, and other amenity program for retail districts in Portsmouth.** Benches, drinking fountains, planters, etc. make walking more comfortable and appealing. These can be provided by businesses individually or coordinated as a street furniture program.	Public Works Dept
Low	**Develop bicycling and walking map.** This can be an online map or printed map showing bike routes, distance between major destinations, sites of interest, transit stops, and other amenities such as public restrooms and water fountains.	Planning Dept
Low	**Provide bike valet service at events.** Volunteers can valet bicycles to temporary parking for events, helping reduce overflow of bicycle parking and illegal bicycle parking, and helping to increase the visibility of bicycling.	Planning Dept

ENCOURAGEMENT

Priority	Recommendation	Associated City Dept
Low	**Expand bus routes and frequency.** Increasing transit service enables more walking and bicycling trips by expanding destinations accessible by foot and bike and by providing an alternate means for a return trip if necessary.	Planning Dept
Low	**Develop bike friendly business program.** Commute Smart TMA or Seacoast should organize its own program or encourage businesses to apply for an existing bike friendly recognition program (such as the League of American Bicyclists Bike Friendly Business program). These programs recognize businesses that offer programs and amenities to employees to encourage bicycling or walking to work, such as financial incentives, bicycle parking, and office shower facilities.	Planning Dept
Low	**Organize special walking events.** Special walking events may include holiday or seasonal themed walks with businesses, walking challenges (distance over time), Walk to Work Days, International Walk to School Day, or other events that encourage people of all ages and abilities to walk.	Planning Dept
Low	**Develop bike benefit program for shoppers.** This program would provide stickers for bike helmets that entitle bicycle riders to discounts from local retailers. Bike benefit programs may also include special hours on bike event days or special events promoting bicycling to retail.	Planning Dept
Low	**Organize Open Street events.** Streets are closed to traffic and open to the community for exercise, recreation, shopping, and general enjoyment during open street events. These events are an opportunity to include walking and bicycling education and build visibility for walking and bicycling programs. Events may be organized by community members and work with the Planning Department to server as a liaison to other city departments.	Planning Dept

ENFORCEMENT

Priority	Recommendation	Associated City Dept
Med	**Revise crash reporting procedures.** Crash reports should be modified to include more accurate information about pedestrian, bicyclist, and motor vehicle precrash maneuvers and crash conditions. This data can help the City to identify the countermeasures for specific types of crashes or locations.	Police Dept
Med	**Install speed feedback signs.** Speed feedback signs can be temporary or permanent. They should be placed near school zones or locations that have high incidence of excessive speeds based on a police records or a speed study.	Police Dept
Med	**Adopt a progressive ticketing program aimed at drivers and bicyclists.** Progressive ticketing programs employ warnings and education before ticketing as a means to educate road users about traffic laws, new facilities, and safe habits.	Police Dept
Low	**Use the Bicycle and Pedestrian plan for project and development review.** Compare all proposed capital projects and development reviews to the infrastructure recommendations in the Bicycle and Pedestrian Master Plan for opportunities to implement recommendations.	Planning Dept

ENGINEERING

Priority	Recommendation	Associated City Dept
High	**Require traffic management plans during construction to provide for pedestrian and bicycle travel.** The City should review traffic management plans for signs and detours that maintain pedestrian and bicyclist access around construction zones.	Public Works Dept
High	**Organize volunteer snow clearance program.** A volunteer snow clearance program recruits community groups, schools groups, sports teams, or community service minded individuals to assist with snow clearance activities. These groups can supplement the City's snow clearance program, focus on routes to transit, or on off-street paths.	Planning Dept
High	**Update pedestrian and bicycle design standards for signalized crossings.** Consider countdown signals for crossings, which increase pedestrian safety by informing pedestrians of remaining crossing time and reducing the number of pedestrians still in the crosswalk when opposing traffic receives a green light.	Public Works Dept
High	**Complete transit access study focused on the siting and conditions of transit stops.** Transit stops should be accessible to disabled persons and connect to sidewalks. Stop locations should be audited for crosswalks and warning signage to improve the visibility and safety of pedestrians using the transit stop.	Planning Dept
High	**Inspect condition of sidewalks, sidepaths, and pedestrian ramps as part of Pavement Condition review.** Incorporate pedestrian and bicycle infrastructure data points into regular maintenance assessments. Data collected in GIS compatible formats can be cross-checked with the Bicycle and Pedestrian Master Plan.	Public Works Dept
High	**Improve snow clearance procedures.** Snow clearance activities should be modified to improve access to pedestrian ramps and crosswalks at intersections and to improve access to pedestrian activation buttons. Snow clearance activities should remove all snow and ice from the sidewalk/ crosswalk surfaces as ice and even thin layers of snow cause hazards, especially for people with limited mobility.	Public Works Dept
Med	**Inspect and restripe bicycle and pedestrian facilities annually.** Pavement markings generally require restriping every 3-5 years to maintain visibility. Pedestrian and bicycle markings should be incorporated into existing inspection programs.	Public Works Dept

ENGINEERING

Priority	Recommendation	Associated City Dept
Med	**Extend Complete Streets, Walk-friendly, and Bike-Friendly policies to a minimum of two years.** The current policies require re-adoption annually which threatens continuity.	Planning Dept
Med	**Provide portable ramps to accommodate wheelchairs over raised/ inaccessible doorways.** For example, Macro Polo, a specialty grocery store in Portsmouth, uses a portable ramp to provide access for people in wheelchairs over the raised threshold in its doorway. Portable ramps are a low-cost way to provide wheelchair access.	Public Works Dept
Med	**Organize volunteer path maintenance events.** The City or other organization should organize volunteers to conduct seasonal maintenance on off-road paths. Maintenance may include trash pickup, sweeping, cleaning of vandalism, and reporting areas in need of more serious maintenance.	Public Works Dept
Med	**Coordinate with COAST to conduct spot improvements at transit stops.** Improvements may include upgrading signage, installing shelters or seating, lighting, route maps, and schedules.	Planning Dept
Med	**Require installation of wheel guards on heavy vehicles.** Wheel guards prevent bicyclists from being pulled under the wheels of heavy vehicles in a crash. The City should retrofit vehicles operated by the City or under contract with the City such as waste removal, construction or maintenance vehicles.	Public Works Dept
Med	**Require restoration of all pedestrian and bicycle pavement markings after street utility repairs.** Include pavement markings as part of inspection list for utility repairs. Supply pavement marking plans with street opening permits.	Public Works Dept
Med	**Update pedestrian and bicycle signage and markings to current standards.** The Manual on Uniform Traffic Control Devices (MUTCD) provides guidance on retroreflectivity, messaging, location, and color for pedestrian and bicycle signage and markings. Current edition is 2009.	Planning Dept
Med	**Include on- and off-road bicycle facilities in maintenance programs.** Bike lanes and off road paths should be cleared of debris and snow, year-round. Bicycle facilities should be added to street sweeping and snow clearance programs.	Planning Dept

ENGINEERING

Priority	Recommendation	Associated City Dept
Low	**Install public bike maintenance stations.** Public maintenance stations allow bicyclists to fill tires with air and complete minor repairs. These stations offer convenience to bicyclists and increase the visibility of bicycling in the community.	Public Works Dept
Low	**Develop mobile or online application to report issues to the City.** A mobile app allows citizens to report maintenance needs such as potholes, sidewalk cracks, missing curb ramps, snow clearance, bike parking requests, or other infrastructure issues that impact walking and bicycling. An app can help the City track work orders and target maintenance to high-demand locations.	Public Works Dept
Low	**Create shared parking ordinance.** The City should implement shared parking allowances. This policy will optimize parking supply in existing surface lots and improve the pedestrian environment by fostering more pedestrian friendly land-use and scale.	Planning Dept
Low	**Install bicycle and pedestrian wayfinding.** Bicycle and pedestrian wayfinding should include navigation to popular destinations, time, and/or distance to destination. This should be integrated with Citywide wayfinding plan for all transportation modes.	Planning Dept
Low	**Create a bicycle parking program.** The City should create a bike parking request system and install new bike racks and bike parking corrals in areas of high demand.	Public Works Dept

EVALUATION

Priority	Recommendation	Associated City Dept
High	**Collect bicycle and pedestrian crash data annually.** The City should collect data bicycle and pedestrian crashes. Crash reports should be modified to include information specific to pedestrian and bicycle crashes (see recommendation regarding crash reports.) Law enforcement may need training on new procedures.	Planning Dept
High	**Establish a standing pedestrian and bicycle advisory committee.** A bicycle and pedestrian advisory committee can assist the City in evaluating and sustaining walking and bicycling policies and programs.	Planning Dept
Med	**Review and update the recommendations of the Bicycle and Pedestrian Plan every two years.** The implementation chapter and prioritized tables will require updates as projects are completed and conditions change over time.	Planning Dept
Med	**Collect and analyze bike and pedestrian counts.** The City should complete annual counts of bicyclist volumes at key locations throughout the City to track bicycle use.	Planning Dept
Med	**In accordance with the Complete Street policy, provide an annual report on the impact of same policy.** Audit complete projects and note the frequency and type of exemptions.	Planning Dept
Med	**Conduct walking audits annually.** A walking audit is a method to determine if neighborhoods or specific routes meet walkability criteria, such as safety, connectivity, accessibility, comfort, cleanliness, and maintenance. Walk audits should be completed near schools or other high demand locations.	Planning Dept
Med	**Review recommended spot improvements and bike boulevards for potential near-term trial improvements.** Some recommendations may be candidates for temporary or low-cost interim improvements. This will allow the City to try out recommendations before construction funding is available.	Planning Dept
Low	**Establish a vehicle miles travelled (VMT) reduction target.** The City should set a target VMT reduction percentage by a specific date. This will provide a benchmark for the Complete Streets policy.VMT may be measured by AADT counts.	Planning Dept
Low	**Establish bicycle/pedestrian mode share goals.** The City should set target mode shares for walking and bicycling. Modeshare can be tracked through census data or local surveys.	Planning Dept
Low	**Conduct a feasibility study for bike share.** Bike share programs can increase bicycle mode share, provide an amenity to visitors, and complement existing transit.	Planning Dept


ONLY

Chapter Five
IMPLEMENTATION

This chapter describes the process, costs, and strategies for implementing the infrastructure and policy and programming recommendations of this plan. Implementation activities involve coordination among the city, state, and non-governmental organizations. Equally important, this chapter outlines methods for ongoing maintenance after the recommendations have been implemented.

Infrastructure Implementation

The Bicycle and Pedestrian Plan recommends that bicycle and pedestrian infrastructure improvements should be considered for and incorporated into all roadway work, construction, and maintenance activities. Some infrastructure recommendations in the plan will not overlap with individual roadway projects and should be scheduled through annual investment budgets or pursued as standalone bicycle or pedestrian improvement projects.

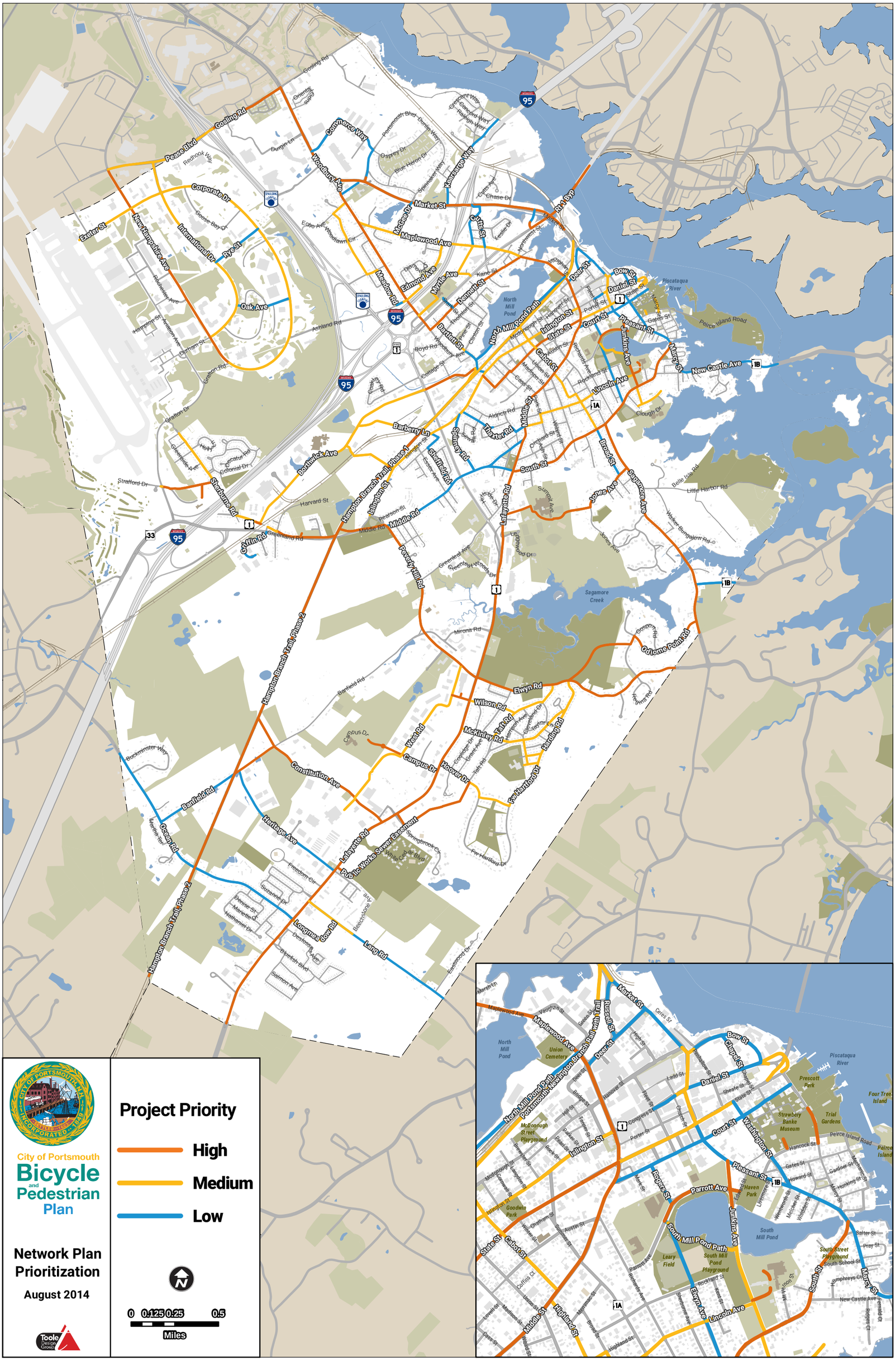
Coordinating bicycle and pedestrian improvements with general infrastructure projects early in the design process is the most cost effective approach for implementation, resulting in cost savings for the City. In most cases, the cost of the pedestrian or bicycle treatments are minimal relative to other major roadway costs and may be able to be incorporated without adding significant burdens to the project. The Complete Streets policy for the City reinforces this approach by incorporating Bicycle and Pedestrian Plan recommendations as part of the City's review process for private development projects. Projects funded and/or constructed by the NHDOT should refer to the recommendations in the Bicycle and Pedestrian Plan during the project scoping phase for potential to incorporate recommendations.

Another cost effective method to implement the bicycle and pedestrian improvements is to incorporate them into existing city maintenance programs. For example, a bicycle lane may be added to an existing road when the road is resurfaced or when pavement markings are restriped. This may require further design to determine if eradication, shifting, or new parking lines, travel lines, or centerlines are necessary. In addition, consideration should be given if existing or future contracts and/or city department budgets need to be modified to include items such as green high friction surface, bicycle pavement markings symbols, or sign materials.

The City's Capital Improvement Plan has several general capital investment programs such as sidewalk improvements or bicycle improvements with annual budgets. The projects implemented through these programs are generally small and located at various, discrete locations in the City. Using the cost calculator, GIS database, and prioritization tables included in the Bicycle and Pedestrian Plan make it easy to estimate budgets and track this type of annual program. The City may also consider creating new budget lines for annual investment such as signal upgrades, signage installation, or pedestrian ramp improvements.

Some large scale bicycle and pedestrian projects may require funding separate from existing city budget programs. Example recommendations are the Hampton Branch Trail or Safe Routes to School projects. In those cases, the projects should be proposed as standalone capital projects. Projects that are primarily focused on bicycle or pedestrian improvements may be eligible for state or federal funding within the federal transportation act, such as the Transportation Alternatives Program under Moving Ahead for Progress in the 21st Century (MAP-21) and future transportation acts. Similarly, high-profile bicycle or pedestrian recommendations can be good candidates for non-profits, public private partnerships, or public fundraising.

Applying the methodology described in Chapter 4, the bicycle and pedestrian infrastructure recommendations were classified as high, medium, and low. The following map indicates the recommendations by priority. The City may use this prioritization for evaluating projects and funding implementation planning.



City of Portsmouth

Bicycle and Pedestrian Plan

Network Plan Prioritization

August 2014

Toole Design Group

Cost Calculator

The cost calculator is a tool for estimating planning level costs for all of the facilities in the Bicycle and Pedestrian Plan infrastructure recommendations.

This tool combines the recommended facility type (sidewalk, bike lane, shared-use path, etc) and the action required for implementation (striping, signage, reconstruction, etc) to arrive at a cost per mile for each type of recommendation.

Costs in the tables below are the result of applying these cost per mile estimates to the actual mileage of both the bike and pedestrian plan infrastructure recommendations in this plan.

In addition, the total costs for bicycle and pedestrian recommendations are broken down by priority as previously described.

For a full breakdown of the cost estimates including unit costs and sources, see the Cost Calculator spreadsheet in Appendix 3.

Bicycle Infrastructure Cost by Facility Type

Bicycle Facility Category	Cost
Bike Boulevard	$3,720,000
Buffered Bike Lane	$100,000
Bike Lane	$2,230,000
Contraflow Bike Lane	$4,000
Climbing Lane	$20,000
Cycle Track	$530,000
Pedestrian Street*	$680,000
Shared-Lane Markings	$100,000
Sidepath, One Side*	$7,190,000
Sidepath, Two Sides*	$4,100,000
Signed Route	$60,000
Shared Street*	$730,000
Shared-Use Path*	$10,460,000
TOTAL PLAN COST	**$29,930,000**

Pedestrian Infrastructure Cost by Facility Type

Pedestrian Facility Category	Cost
Pedestrian Street*	$680,000
Reconstruct Sidewalk	$1,050,000
Sidepath, One Side*	$7,190,000
Sidepath, Two Sides*	$4,100,000
Shared Street*	$860,000
Shared-Use Path*	$10,280,000
Sidewalk, One Side	$6,400,000
Sidewalk, Two Sides	$4,280,000
Widen Sidewalk	$250,000
TOTAL PLAN COST	**$35,090,000**

Shared Infrastructure Cost by Facility Type

Shared Bike/Ped Facilities	Cost
Pedestrian Street*	$680,000
Sidepath, One Side*	$7,190,000
Sidepath, Two Sides*	$4,100,000
Shared Street*	$860,000
Shared-Use Path*	$10,280,000
TOTAL SHARED COSTS	**$23,110,000**

Bicycle Infrastructure Costs by Priority

Bicycle Project Priority	Cost
High	$17,110,000
Medium	$8,340,000
Low	$4,490,000
TOTAL PLAN COST	**29,930,000**

Pedestrian Infrastructure Costs by Priority

Pedestrian Project Priority	Cost
High	$19,160,000
Medium	$10,170,000
Low	$5,760,000
TOTAL PLAN COST	**$35,090,000**

Infrastructure Implementation Process

The implementation of bicycle and pedestrian infrastructure should follow the process and protocols in place for all types of infrastructure projects. A typical infrastructure process includes a phase of design and review, community outreach, and construction.

Design and Review

All infrastructure projects will require engineering design and review. The design and review process for each project will vary depending on designer, such as a private consultant or City department, and funder, such as the City or NHDOT.

The design and review section of the process will include development of engineering plans, specifications, and estimates for construction and should follow federal, state, and local standards and guidelines. Projects may require an initial feasibility or conceptual design study as part of the design process and may require further analysis. Consideration should be given to conducting a walking and/or bicycling audit at the beginning of the project to identify existing bicycle and pedestrian issues that should be addressed during the design process. Projects with state or federal funding may require additional scoping for environmental or other permitting requirements. All prepared construction documents should be reviewed by all the necessary City departments including, but not limited to, the Planning Department, Public Works Department, and the Police and Fire Departments.

If the project lead is outside of the City administration, namely a private entity or the State, the Planning or Public Works Departments may require peer review to ensure that the project is designed and implemented according to the City's standards and the intent of the Bicycle and Pedestrian Plan.

Community Outreach

Concurrently with the design and review aspect of the implementation process, the project should include a community outreach component. The community outreach component may include public meetings, online forums, direct outreach to individuals, organizations, or schools, or other appropriate methods to obtain feedback from the community. Consideration should be given to be sure all infrastructure recommendations address issues that are particularly relevant for all types of populations, especially the young and the disabled.

Construction

After the completion of the design and review aspect and the community outreach aspect, the project may be implemented through construction. Construction of the recommendations may be completed by selecting a contractor through a public bid process or using City staff through the Public Works Department.

During construction, bicycle and pedestrian impacts should be limited by maintaining access. If using alternative routes or detours, consideration should be used to provide the most direct route with appropriate signage. In some instances, transit stops may need to be temporarily relocated and appropriate signage should be used.

At the completion of construction, informational signage or increased enforcement may be necessary for some of the recommendations being installed for the first time. This may include where bike signals or bike boxes are installed, where street operations are being modified, or where new traffic controls are installed.

Maintenance

Maintenance is critical for the function, performance, and longevity of bicycle and pedestrian infrastructure. Bicycle and pedestrian facilities should be added to inspection schedules and the maintenance and repair of facilities should be accounted for in maintenance budgets.

Seasonal Maintenance

- Removal of debris
- Snow clearance

Examples of facilities requiring annual inspection and maintenance include:

- Lighting
- Pedestrian push buttons, audible devices, and indications
- Pedestrian ramps and tactile warning devices
- Signage for overall condition, retroreflectivity, and vegetation overgrowth
- Roadway sight lines including tree pruning
- Striping of crosswalks, bicycle facilities, and other pavement markings
- Surface condition of facilities, including in-roadway facilities, sidewalks, and paths

Policy and Programming Implementation

The City of Portsmouth has already established many successful policies and practices for encouraging and promoting walking and bicycling. It is critical to build on these existing assets and programs, to expand their reach, and to continually strive toward more ambitious policies and programs in order to achieve the vision of the Bicycle and Pedestrian Plan.

In order to have a well-balanced and effective set of programs it is important to pursue recommendations in all of the Five E's. Education, enforcement, and evaluation, in particular, take sustained effort to implement. Fortunately, policy and programming recommendations can be spearheaded by a broad array of actors and funded in numerous ways—or may require no funding at all.

The Planning Department is the steward of the Bicycle and Pedestrian Plan, however the plan's implementation is dependent on the participation of many departments and entities, as well as City boards and committees. The policy and programming recommendations table indicates the lead City department. In practice, this department will often be a collaborator or liaison with a partner in the business community or a community organization.

A Bicycle and Pedestrian Advisory Committee could be a valuable resource in this area. Members should include representatives from community organizations that can partner with the City to implement the recommendations. The City could reach out to major employers as well as adovcates to participate in the Advisory Group and collaborate on some of the policy and programming recommendations. The recent establishment of a regional Transportation Management Association (Commute Smart Seacoast) is very encouraging and the City should continue this collaboration.

Flexibility with Prioritization

Policy and programming recommendations will be implemented by both city agencies and non-city organizations. Implementers should consider but not be constrained by the prioritization assigned to the recommendations presented in this plan. Non-city organizations charged with implementing certain recommendations may accelerate the implementation process if those recommendations are closely aligned with their organizational missions or if they find opportunities to move recommendations forward.

Funding for policy and programming is based to a large extent on affinity and opportunity. Recruiting more entities and departments to take up these recommendations opens more avenues for funding and organizing the initiatives. Several of the recommendations for programming are volunteer efforts and require more labor and organization than funding.

Implementation of City Projects

The Bicycle and Pedestrian Plan vision should be referred to for all City infrastructure projects regardless of whether it is included within this plan. The vision should be discussed during the design and review process, as part of all public outreach efforts, and when determining construction phasing

and staging. Consideration should be given to the construction phasing and staging to reduce bicycle and pedestrian impacts.

Tracking and Reporting

The Planning Department should keep track of the infrastructure and non-infrastructure recommendations implemented each year using the recommendation tables and GIS database from the plan. A quarterly or annual update to the status of the recommendations may be appropriate. Reporting on status and implementation could be posted on PlanPortsmouth or as a report back to the Planning Board.

Measuring Impact

Measuring the scale and impact of investments in infrastructure, policy or programming is essential to build momentum towards achieving the vision of the Bicycle and Pedestrian Plan. Some projects and initiatives may not seem successful initially but should be evaluated and analyzed to understand long term impacts. Based on the outcome, the recommendations of the Bicycle and Pedestrian Plan may be modified to help refine future recommendations, policies, or programming and may reduce costs.

The bicycle and pedestrian counts recorded in 2014 provide a good baseline to measure overall growth in bicycling and walking rates. Establishing before and after volumes for individual locations or programs is especially valuable data to track demand, measure impact, or advocate for funding for specific projects.

Crash rates are another important statistic that should be tracked. Crash rates should be analyzed in the context of "exposure," or walking and bicycling rates in relation to number of incidents. Small data samples can produce misleading statistics. Another way of measuring safety is through surveys tracking the perception of safety. Intercept surveys at a specific location and/or community surveys that track perception changes over time are a useful supplement to maintaining crash records.

Appendix 1.

Opportunities, Assets and Constraints Maps


North
inter-jurisdictional coordination: work with newington to develop mid-block crossing to bus -stops
wide intersection: ped-scaling and amenities needed
wide ROW: for bus stop improvements, existing project
ped-only connection: existing gates remain clear and open to ped access
proposed access road: closed to vehicles, provides low stress connection
quiet street: low-stress park connection
wide roadway and ROW: room for separated bike-ped facility
surplus roadway space: separated bike/ped facilities
existing ped-bridge provides crossing of market st
pease to market: potential connection
wide intersection: timing and ADA-enhancement opportunity
cutts to market: potential connection
forked intersection: reclaim ped space
2 travel lanes, limited width & ROW make improvements difficult. traffic calming & ped improvements needed
bridge, poor sidewalk condition, limited width for improvements
existing low-stress facility connects pease to downtown
path transition opportunity
wide roadway: space for bike lane improvements
bridge: pinch point
ped-bike connection to school can be enhanced
quiet residential street: enhance through connection
proposed road: high quality bike and ped route and connection across highway
limited space for improvements, line-of-sight issues due to road curvature, high traffic volume
Gosling Rd
Woodbury Ave
Commerce Way
Shopping
Portsmouth Blvd
Dunlin Way
Crescent Way
Ranger Way
Kearsarge Way
Hislop Field
Granite St
Shearwater Dr
Market St
Alumni-Wentworth Field
Rec Center
McGee Dr
Maplewood Ave
Cutts St
Central Ave
Edmond Ave
New Franklin School
Dennett St
Franklin Dr
Stark St
Pine Street Playground
Bartlett St
Cottage St
Cate St
Islington St
Oak Ave
Ashland Rd
Melbourne St
Aldrich
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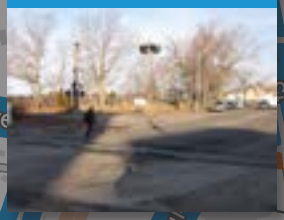
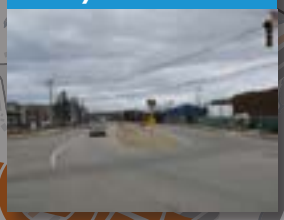
asset
opportunity
constraint
neutral
PLACES
transit stop
school
destination
monthly
weekly
daily

Downtown/West End

wide roadway, poor condition: reconstruct with high-quality bike-ped facilities



wide roadway and ROW: room for separated bike-ped facility



wide travel lane: bike lane improvements

wide intersection: reclaim ped space add pedestrian amenities

quiet residential streets: traffic calming and wayfinding can make low-stress alternative to islington

vaughan mall: pedestrian-only corridor

market square: hub of pedestrian activity

parking lot in poor condition, ill-defined space: ped and bike improvements needed

existing bike lanes: restripe and sign

long wait-times, high ped and vehicle volumes: prioritize pedestrians

existing bike lane and pedestrian connection

2 travel lanes, limited width & ROW, poor condition: bike improvements difficult

large turning radius and crossing distances: narrow for pedestrian priority

quiet residential streets: traffic calming and wayfinding can make low-stress bike boulevards

alternative route to islington, connection to future hampton branch rail trail

sidewalk easement: ped-connection to chevrolet ave

McDonough St
State St
Cabot St
Union St
Middle St
Cass St
Aldrich Rd
Islington St
Cate St
Deer St
Hanover St
High St
Congress St
Daniel St
Bow St
Court St
Market Square
Goodwin Park
Cater Park
Plaza 800
Playground
Leary Field
Clough Dr
Clough Field
Ewyn Ave
Broad St
Prescott Park
Strawbery Banke Museum
Little Harbour School

Portsmouth Bicycle and Pedestrian Plan

ASSETS, OPPORTUNITIES, & CONSTRAINTS

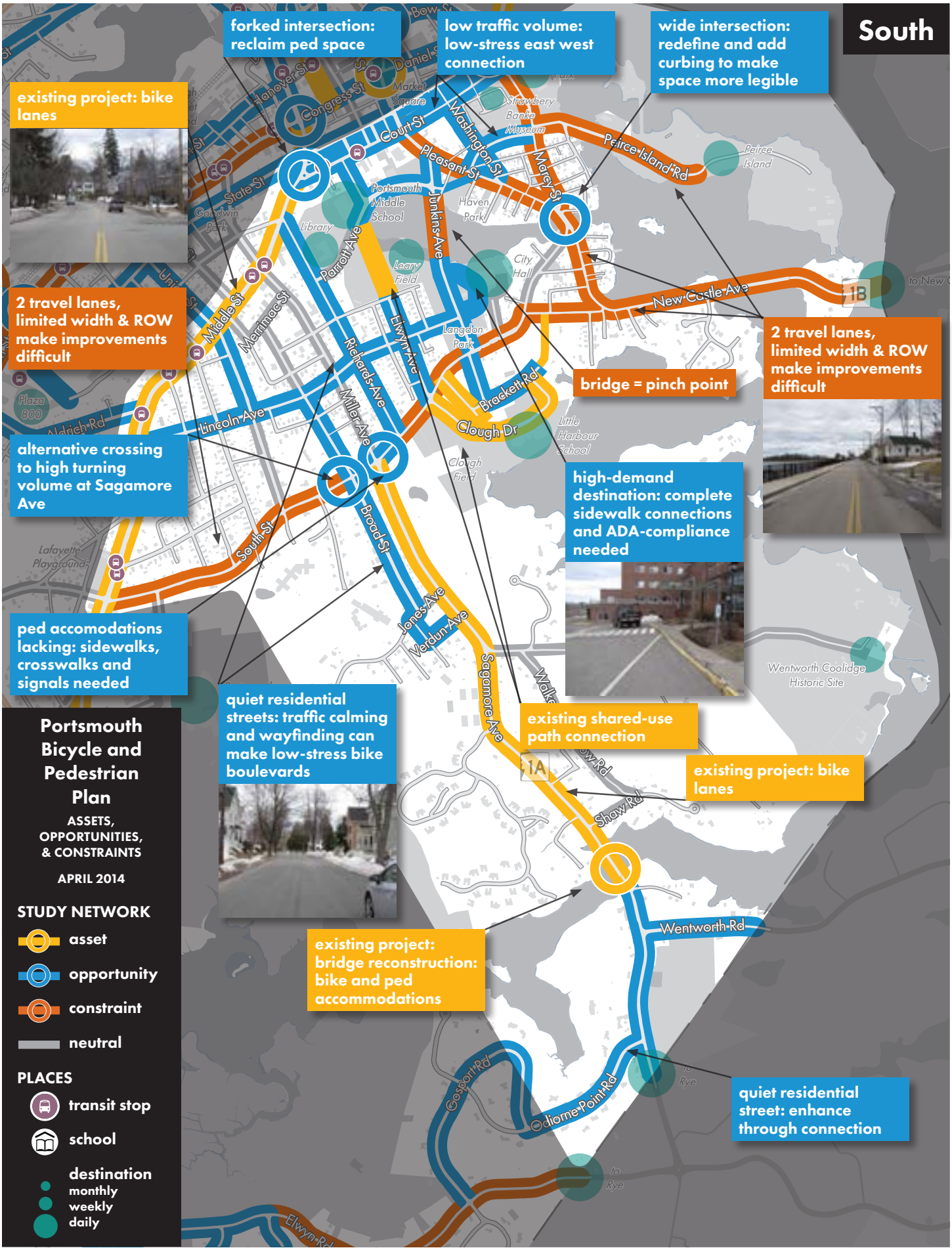
APRIL 2014

STUDY NETWORK

- asset
- opportunity
- constraint
- neutral

PLACES

- transit stop
- school
- destination
  - monthly
  - weekly
  - daily


South
forked intersection: reclaim ped space
low traffic volume: low-stress east west connection
wide intersection: redefine and add curbing to make space more legible
existing project: bike lanes
2 travel lanes, limited width & ROW make improvements difficult
bridge = pinch point
2 travel lanes, limited width & ROW make improvements difficult
alternative crossing to high turning volume at Sagamore Ave
high-demand destination: complete sidewalk connections and ADA-compliance needed
ped accomodations lacking: sidewalks, crosswalks and signals needed
quiet residential streets: traffic calming and wayfinding can make low-stress bike boulevards
existing shared-use path connection
existing project: bike lanes
existing project: bridge reconstruction: bike and ped accommodations
quiet residential street: enhance through connection
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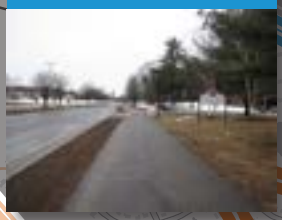
monthly
weekly
daily
Congress St
Market Square
Court St
Washington St
Pleasant St
Marcy St
Peirce Island Rd
Peirce Island
Strawbery Banke Museum
Haven Park
Portsmouth Middle School
Junkins Ave
Parrott Ave
Goodwin Park
Library
Leary Field
City Hall
New Castle Ave
1B
Middle St
Merrimac St
Elwyn Ave
Langdon Park
Brackett Rd
Clough Dr
Little Harbour School
Clough Field
Richards Ave
Miller Ave
Lincoln Ave
Aldrich Rd
Plaza 800
South St
Broad St
Lafayette Playground
Jones Ave
Verdun Ave
Sagamore Ave
Wentworth Coolidge Historic Site
1A
Shaw Rd
Wentworth Rd
Gosport Rd
Odiorne Point Rd
to Rye
Elwyn Rd

Pease

wide intersections: reclaim space for peds

underpass = pinch point

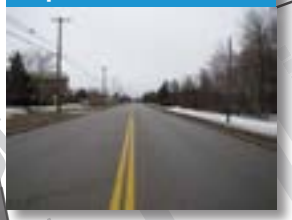
existing sidepath: connect to bike/ped network



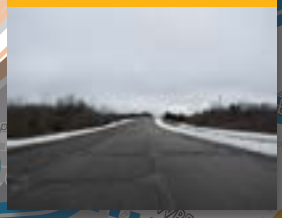
extra-ROW: space for sidewalks connecting to transit stops

wide ROW, low density development: space for bike/ped paths

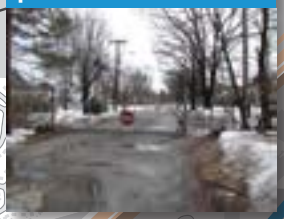
surplus roadway: space for bike improvements



existing low-stress facility connects pease to downtown, maintenance and repaving needed



no through traffic: enhance neighborhood bike/ped connection



with trail completion: provide bike/ped connections to transportation center with secure bike parking

future low-stress facility connects pease to greenland

existing ROW, limited vehicular access: formalize bike-ped connection to transportation center

wide ROW: shared-use path accommodation at intersection

Pease Blvd
Commerce Way
Shopping
Pease North
Exeter St
Rochester Ave
International Dr
Rye St
New Hampshire Ave
Oak Ave
Ashland Rd
Pease South
Corporate Dr
Grafton Dr
Sherburne Rd
Country Club Rd
Transportation Center
Pannaway Playground
Hospital
Islington St
Portsmouth Plains Field
33

Portsmouth Bicycle and Pedestrian Plan

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- asset
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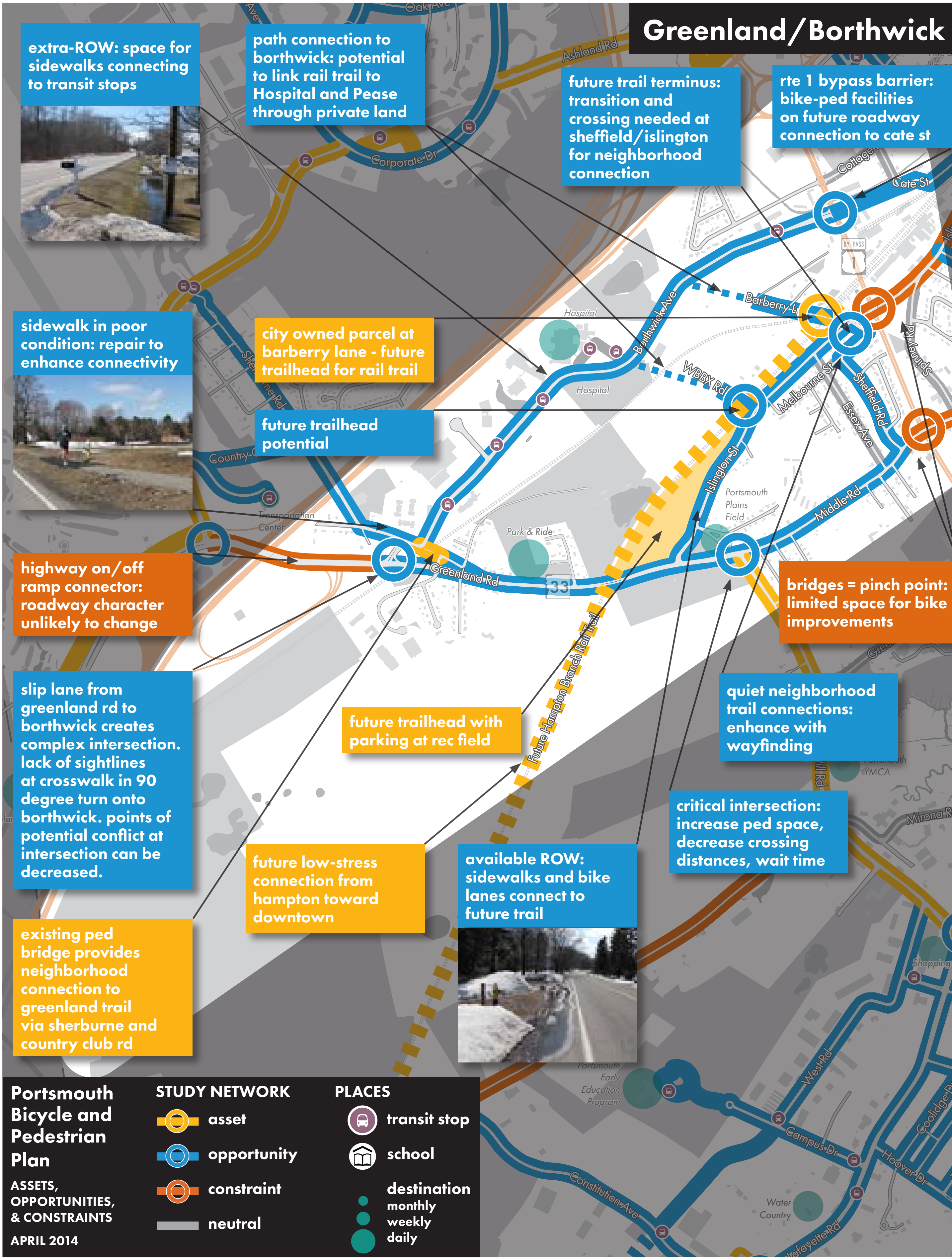
- constraint
- neutral

PLACES

- transit stop
- school
- destination
  - monthly
  - weekly
  - daily


Greenland/Borthwick
extra-ROW: space for sidewalks connecting to transit stops
path connection to borthwick: potential to link rail trail to Hospital and Pease through private land
future trail terminus: transition and crossing needed at sheffield/islington for neighborhood connection
rte 1 bypass barrier: bike-ped facilities on future roadway connection to cate st
sidewalk in poor condition: repair to enhance connectivity
city owned parcel at barberry lane - future trailhead for rail trail
future trailhead potential
highway on/off ramp connector: roadway character unlikely to change
bridges = pinch point: limited space for bike improvements
slip lane from greenland rd to borthwick creates complex intersection. lack of sightlines at crosswalk in 90 degree turn onto borthwick. points of potential conflict at intersection can be decreased.
future trailhead with parking at rec field
quiet neighborhood trail connections: enhance with wayfinding
critical intersection: increase ped space, decrease crossing distances, wait time
future low-stress connection from hampton toward downtown
available ROW: sidewalks and bike lanes connect to future trail
existing ped bridge provides neighborhood connection to greenland trail via sherburne and country club rd
Ashland Rd
Corporate Dr
Cottage
Cate St
Barberry Ln
Borthwick Ave
WBBY Rd
Melbourne St
Sheffield Rd
Essex Ave
Islington St
Middle Rd
Greenland Rd
Future Hampton Branch Rail Trail
Hospital
Park & Ride
Portsmouth Plains Field
Transportation Center
Mirona Rd
West Rd
Campus Dr
Hoover Dr
Coolidge Dr
Constitution Ave
Lafayette Rd
Water Country
Portsmouth Early Education Program
Shopping
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Lafayette

existing project: bike and ped facility connection to YMCA

additional ROW: space for bike facility, sidewalks, enhanced transit stops

new roadway alignment and traffic signal promote intersection improvements

quiet residential street: alternative bicycle route

wide intersection: improve ped safety, add crosswalks, ADA-compliance, signal improvements

future low-stress connection from Hampton toward Downtown

high speed traffic, limited road space due to wetlands: limited improvements possible

wide roadway and ROW: potential for high-quality trail connection

potential for high quality connection in additional ROW

limited road space and ROW: narrow winding roads and high speeds

potential trailhead at rail trail crossing

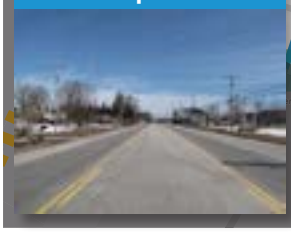
quiet residential streets: potential to narrow widths with sidewalks and traffic calming devices

sidewalk connection through parking lot

connecting facilities needed

future trailhead: transition needed

wide roadway and ROW: potential for separated bike-ped facility, enhanced transit stops



new road: bike-ped facilities connect to signalized intersection

limited ROW and road space: sidewalks may be possible

wide intersection: increase ped space, add crosswalks, ADA-compliance, signal improvements

limited ROW, road space, lack of development: limited improvement possible

Appendix 2.

Existing Plans, Policies, and Programs

Existing Plans, Policies, and Programs

The City of Portsmouth has made investment in bicycle and pedestrian infrastructure, plans, programs, and policies in recent years. These include pilot infrastructure projects, such as bike lanes and shared use markings (detailed in the Existing Conditions maps), Complete Streets and Walk / Bike Friendly Community policies, and events that celebrate walking and bicycling. Recommendations for policies and programs will build on these existing key initiatives to improve conditions for walking and bicycling.

The following are summaries of key plans, programs, and policies that support safe walking and bicycling in the City of Portsmouth.

Plans

Blue Ribbon Committee on Transportation Policy Report 2013

The Portsmouth Blue Ribbon Committee on Transportation developed a report with recommendations for policies, principles and positions for transportation in Portsmouth. The report recommended three goals, eight guiding principles, and four recommended policies. The three goals are to:

1. Provide a transportation network that is safe and accessible for all people and all transportation modes.
2. Design transportation infrastructure that supports economic vitality and is sensitive to community and environmental context.
3. Provide affordable and convenient options for all transportation modes.
4. Incorporate goals in Bicycle and Pedestrian Master Plan.

Islington Street Corridor Improvement Action Plan 2009

The 2009 conceptual plan includes recommendations to improve pedestrian access and comfort, calm traffic, create community gateways, and highlight the creative economy of the corridor. In 2014, the Islington Bridge over Route 1 will be replaced and preliminary design work for Islington Street between Barlett Street and Maplewood Avenue was underway.

Market Street Extension Gateway Streetscape Improvements Plan 2008

The conceptual plan includes recommendations to improve the streetscape along the Market Street Extension, between Kearsarge Way and Deer Street, the main access route between downtown Portsmouth and the Woodbury Avenue commercial area.

NH Coastal Scenic Byway Corridor Study (In Progress)

Route 1A and Route 1B from Seabrook to Portsmouth is a designated NH Coastal Scenic Byway and National Scenic Byway. In order to protect the byway's scenic value, and natural and cultural resources, the City of Portsmouth and the Rockingham Regional Planning Commission are developing a corridor study to improve traffic congestion, recreational use, and visitor amenities.

NH Seacoast Greenway (In Progress)

This document summarizes the process of planning the New Hampshire Seacoast Greenway (NHSG), a proposed 17-mile non-motorized transportation/ recreation corridor that will comprise New Hampshire's segment of the East Coast Greenway (ECG).

Wayfinding Plan 2014

The Portsmouth Wayfinding plan establishes graphic standards and a location/placement plan for signage. The plan includes recommendations for bicycle and pedestrian wayfinding. The plan was a recommended action from the Blue Ribbon Transportation Committee Report.

Policies

Bicycle Friendly Community Policy 2013

This policy was created in response to a goal of the 2005 Master Plan, which called for the City to provide for safe and convenient bicycle and pedestrian circulation throughout the city. The policy states that "Accommodating bicycles and improving safe bicycle travel shall be integrated into municipal decision-making, practices and processes."

Complete Streets Policy 2013

This policy states that the City will plan for, design, construct, operate and maintain appropriate facilities for pedestrians, bicyclists, transit vehicles and riders in all construction projects subject to certain exceptions. These exceptions include (but are not limited to), streets where the existing right of way does not allow for accommodations of all users; where cost of implementation is disproportionate to the need, projects that would have unreasonable adverse environmental or land use impacts.

City Ordinance 7.5

Generally, bicyclists are subject to the same traffic rules as motorized vehicles. Bicyclists are not permitted to ride on sidewalks and must observe all traffic laws. Bicyclists are also required to hold a license and all bicycles must have a front light and rear red light or reflector, brakes, and bell or warning device.

Pedestrian Friendly Community Policy 2013

This policy lists objectives to facilitate safe walking and creation of high quality public spaces for all people in Portsmouth.

Portsmouth Subdivision Regulations (Amended 2014)

The Portsmouth Subdivision regulations state that streets in new subdivisions should serve as continuations of existing principal streets to maintain connectivity. The regulations do not require or encourage bicycle and pedestrian facilities explicitly.

Programs

COAST Bicycle Accommodations

The Cooperative Alliance for Seacoast Transportation (COAST) regional bus organization has supported bicycle links to transit by funding bicycle racks at key bus stops in Portsmouth, adding bicycle racks to buses, and installing bike lockers at the Portsmouth Park 'n Ride facility.

Portsmouth Criterium

The Portsmouth Criterium is an annual bicycling event in downtown Portsmouth. The Criterium includes a loop race around downtown Portsmouth and an accompanying festival. The event typically attracts around 8,000 people (bicyclists and attendees).

Portsmouth Recreation Department Senior Walking Club

The Portsmouth Recreation Department has a standing Senior Walking Club, which meet at 8:00 AM Mondays and Thursdays at the South Mill Pond Parking lot on Junkins Avenue. The group walks for approximately ½ to 1 mile. This parking lot is in close proximity to Portsmouth City Hall and to the Senior Center, as well as a recreational path adjacent to the South Mill pond.

Portsmouth Summer in the Streets

Pleasant Street from Porter Street to Market Square closes to vehicular traffic on select evenings

in the summer to host music and other arts events and encourage pedestrian activity.

Safe Routes to School

NHDOT operated a stand-alone Safe Routes to School program, which supported six rounds of funding for travel plans in schools across the state and currently offers funding for schools to start local SRTS programs and for schools to conduct travel plans. In 2010, the SRTS program conducted a SRTS action plan for Portsmouth's four elementary schools, which recommended infrastructure improvements as well as programs and events to boost rates of students walking and bicycling to school.

Appendix 3.

Cost Calculator

This cost calculator was developed for the Portsmouth Bicycle and Pedestrian Plan to provide **planning-level cost estimates**. While many assumptions may be applicable for other applications, assumptions and cost variables should be adjusted.

Source:
Unit prices were estimated by using:

- New Hampshire Department of Transportation Weighted Average Unit Prices for Projects in Years: 2013 Qtr 4, 2013 Qtr 3, 2013 Qtr 2, 2013 Qtr 1

- City of Portsmouth, Bid Tabulation, Sagamore Avenue Reconstruction Project - Phase 1, dated July 2,

	Facility Unit Cost (per mile)	Calculation	Assumptions
Off-Street Facilities			
Action: Reconstruction			
Shared Street	$2,190,000.00	Facility Unit Cost = (((5280 feet * 20 feet)/9 feet per yard * $120/SY + 5280 feet * 2 curbs * $10/foot + 55 bollards * $750/bollard * 2 sides + 20 signs * $250/sign + 200 structures * $300/structure + $10,000 + $100,000) * 1.03) *1.2	Assume roadway width is 20 feet with excavation of 12 inches and a non-asphalt surface including the cost of 2 raised intersections at each end. Roadway excavation and materials is $120/SY. Assume curbing to be R&R at $10/foot. Assume bollards at 100 foot spacing on each side of the road (approx 55 bollards per mile) at $750/bollard. Assume 20 signs per mile at $250/sign. Assume utilities and drainage structures need to be adjusted only at 200 structures/mile at $300/structure. Assume erosion control is $10,000/mile and traffic management is $50,000/mile + $50,000/mile for police. Assume mobilization is 3% of the total cost and a contingency of 20%.
Pedestrian Street (Temporary Installation)	$140,000.00	Facility Unit Cost = 66 planters * $2,000/planter + 20 signs * $250/sign	Assumes this a temporary closure. Install planters at entry points. Assume 2 roadway ends and approximately 10 intersections - 20 additional roadway ends with 20 foot wide entries per mile. Assume per planter a cost of $2000/planter and 3 are used at each roadway end (approximately 66 planters). Assume 20 signs per mile at $250/sign.
Pedestrian Street (Permanent Installation)	$2,190,000.00	Facility Unit Cost = (((5280 feet * 20 feet)/9 feet per yard * $120/SY + 5280 feet * 2 curbs * $10/foot + 55 bollards * $750/bollard * 2 sides + 20 signs * $250/sign + 200 structures * $300/structure + $10,000 + $100,000) * 1.03) *1.2	Assume roadway width is 20 feet with excavation of 12 inches and a non-asphalt surface including the cost of 2 raised intersections at each end. Roadway excavation and materials is $120/SY. Assume curbing to be R&R at $10/foot. Assume bollards at 100 foot spacing on each side of the road (approx 55 bollards per mile) at $750/bollard. Assume 20 signs per mile at $250/sign. Assume utilities and drainage structures need to be adjusted only at 200 structures/mile at $300/structure. Assume erosion control is $10,000/mile and traffic management is $50,000/mile + $50,000/mile for police. Assume mobilization is 3% of the total cost and a contingency of 20%.
Shared Use Path (independent ROW)	$1,230,000.00	Facility Unit Cost = (((5280 feet * 11 feet)/9 feet per yard * $35/SY + (1400 trees * $500/tree) + (5280 feet * 6 feet)/9 feet per yard * $5/SY + 2 ramps * $1300/ramp + 5280 feet * 0.33 * $1.00/foot + 20 signs * $250/sign + $10,000 + $25,000) * 1.03) *1.2	Assume asphalt path is 11 feet wide within 20 foot ROW. Excavation and materials is $35/SY. Assume wooded area with removal of 1400 trees per mile at $500/tree. Loam and seed for a 3 foot clear zone excavation and materials is $5/SY. Assume per mile there are 2 ADA ramps at $1300/ramp. Assume no curb modifications. Assumes a dashed center line. Assumes $1.00/LF for thermo from NHDOT. Typically up to 20 signs per mile are installed (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.Assume erosion control is $10,000/mile. Assume $25,000/mile for landscape. Assume mobilization is 3% of the total cost and a contingency of 20%.
Bicycle Lane - Reconstruction	$590,000.00	Facility Unit Cost = (((5280 feet * 10 feet)/9 feet per yard * $35/SY + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + $1.00/foot * 5280 feet * 1 line * 2 sides + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides + 20 structures * $300/structure * 2 sides + 4 units * $4000/unit * 2 sides + $10,000 + $25,000) * 1.03) *1.2	Assume total of 10 feet is reconstructed for bicycle lanes. Roadway excavation and materials is $35/SY. Assume per mile there are 20 ADA ramps at $1300/ramp for each side of the roadway. Assume curbing to be R&R at $10/foot on both sides. Assumes 1 bicycle lane line and 30 bike and arrow symbols per mile are added on both sides of the road. $330 per bike and arrow symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Assume 10 signs per mile on each side of the roadway at $250/sign. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure for both sides of the roadway. Assume drainage structures that need to be changed in type is 4 units/mile at $4000/unit. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Cycle Track - Reconstruction/Road Diet	$710,000.00	Facility Unit Cost = (((5280 feet * 15 feet)/9 feet per yard * $35/SY + 20 ramps * $1300/ramp + 5280 feet * 2 curbs * $10/feet + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides + 20 structures * $300/structure * 2 sides + 4 units * $4000/unit * 2 sides + $10,000 + $25,000) * 1.03) *1.2	Assume total of 15 feet is reconstructed for cycle tracks. Roadway excavation and materials is $35/SY. Assume per mile there are 20 ADA ramps at $1300/ramp. Assume curbing to be R&R at $10/foot on both sides. Assumes 30 bike and arrow symbols per mile are added on both sides of the road. $330 per bike and arrow symbol includes the materials and installation. Assume 10 signs per mile on each side of the roadway at $250/sign. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.

	Facility Unit Cost (per mile)	Calculation	Assumptions
Side-Path, 1 Side - Reconstruction/Road Diet	$640,000.00	Facility Unit Cost = (((5280 feet * 17 feet)/9 feet per yard * $35/SY * 1 side + 20 ramps * $1300/ramp * 1 side + 5280 feet * 1 curbs * $10/feet + 5280 feet * 0.33 * $1.00/foot + 10 signs * $250/sign * 1 side + 20 structures * $300/structure + 4 units * $4000/unit * 1 side + $10,000 + $25,000 + $25,000) * 1.03) *1.2	Assume roadway width is 17 feet on one side of the road. Roadway excavation and materials is $35/SY. Assume per mile there are 20 ADA ramps at $1300/ramp for each side of the road. Assume curbing to be R&R at $10/foot for one side of the road. Assumes a dashed center line. Assume 10 signs per mile at $250/sign for one side of the road. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure for one side of the road. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit for one side of the road. Assume erosion control is $10,000/mile and traffic management is $25,000/mile + $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Side-Path, 2 Sides - Reconstruction/Road Diet	$1,200,000.00	Facility Unit Cost = (((5280 feet * 17 feet)/9 feet per yard * $35/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + 5280 feet * 0.33 * $1.00/foot * 2 sides + 10 signs * $250/sign * 2 sides + 20 structures * $300/structure * 2 sides + 4 units * $4000/unit * 2 sides + $10,000 + $25,000 + $25,000) * 1.03) *1.2	Assume roadway width is 17 feet on both sides of the road. Roadway excavation and materials is $35/SY. Assume per mile there are 20 ADA ramps at $1300/ramp for each side of the road. Assume curbing to be R&R at $10/foot for both sides of the road. Assumes a dashed center line. Assume 10 signs per mile at $250/sign for both sides of the road. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure for both sides of the road. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit for both sides of the road. Assume erosion control is $10,000/mile and traffic management is $25,000/mile + $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Add Sidewalk, One Side - Cement Concrete Sidewalk	$520,000.00	Facility Unit Cost = (((5280 feet * 8 feet)/9 feet per yard * $60/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + 20 structures * $300/structure + 4 units * $4000/unit + $10,000 + $25,000) * 1.03) *1.2	Assume additional sidewalk is 6 feet plus 2 feet for installation. Sidewalk excavation and materials is $60/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Add Sidewalk, Two Sides - Cement Concrete Sidewalk	$990,000.00	Facility Unit Cost = (((5280 feet * 8 feet)/9 feet per yard * $60/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + 20 structures * $300/structure * 2 sides + 4 units * $4000/unit * 2 sides + $10,000 + $25,000) * 1.03) *1.2	Assume additional sidewalk is 6 feet plus 2 feet for installation on both sides of the roadway. Sidewalk excavation and materials is $60/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure on both sides. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit on both sides. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Add Sidewalk, One Side - Brick Sidewalk	$870,000.00	Facility Unit Cost = (((5280 feet * 8 feet)/9 feet per yard * $120/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + 20 structures * $300/structure + 4 units * $4000/unit + $10,000 + $25,000) * 1.03) *1.2	Assume additional sidewalk is 6 feet plus 2 feet for installation. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Add Sidewalk, Two Sides - Brick Sidewalk	$1,690,000.00	Facility Unit Cost = (((5280 feet * 8 feet)/9 feet per yard * $120/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + 20 structures * $300/structure * 2 sides + 4 units * $4000/unit * 2 sides + $10,000 + $25,000) * 1.03) *1.2	Assume additional sidewalk is 6 feet plus 2 feet for installation on both sides of the roadway. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure on both sides. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit on both sides. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.

	Facility Unit Cost (per mile)	Calculation	Assumptions
Reconstruct Sidewalk, One Side - Cement Concrete Sidewalk	$410,000.00	Facility Unit Cost = (((5280 feet * 6 feet)/9 feet per yard * $60/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume sidewalk is 6 feet. Sidewalk excavation and materials is $60/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assume no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Reconstruct Sidewalk, Two Sides - Cement Concrete Sidewalk	$770,000.00	Facility Unit Cost = (((5280 feet * 6 feet)/9 feet per yard * $60/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume sidewalk is 6 feet on both sides of the roadway. Sidewalk excavation and materials is $60/SY. Assume per mile there are 4 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assume no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Reconstruct Sidewalk, One Side - Brick Sidewalk	$670,000.00	Facility Unit Cost = (((5280 feet * 6 feet)/9 feet per yard * $120/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume sidewalk is 6 feet. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assumes no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Reconstruct Sidewalk, Two Sides - Brick Sidewalk	$1,290,000.00	Facility Unit Cost = (((5280 feet * 6 feet)/9 feet per yard * $120/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume sidewalk is 6 feet on both sides of the roadway. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assumes no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Widen Sidewalk, One Side - Cement Concrete Sidewalk	$580,000.00	Facility Unit Cost = (((5280 feet * 10 feet)/9 feet per yard * $60/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume new sidewalk is 10 feet. Sidewalk excavation and materials is $60/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assume no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Widen Sidewalk, Two Sides - Cement Concrete Sidewalk	$1,110,000.00	Facility Unit Cost = (((5280 feet * 10 feet)/9 feet per yard * $60/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume new sidewalk is 10 feet on both sides of the roadway. Sidewalk excavation and materials is $60/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assume no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Widen Sidewalk, One Side - Brick Sidewalk	$1,020,000.00	Facility Unit Cost = (((5280 feet * 10 feet)/9 feet per yard * $120/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume new sidewalk is 10 feet. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assumes no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Widen Sidewalk, Two Sides - Brick Sidewalk	$1,980,000.00	Facility Unit Cost = (((5280 feet * 10 feet)/9 feet per yard * $120/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume new sidewalk is 10 feet on both sides of the roadway. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assumes no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.

	Facility Unit Cost (per mile)	Calculation	Assumptions
On-Street Facilities			
Action: Add Striping and Markings; Add Striping and Markings, 2 Lanes; Remove Parking			
Bike Lane, One Side - Parking Both Sides	$ 23,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 2 lines + $330/symbol * 30 symbols/mi + $250/sign * 10 signs/mi * 1 side	Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on one side of the roadway to create the bicycle lane. $330 per bike and arrow symbol includes the materials and installation. Assumes $1.00/LF for thermo from NHDOT. Typically up to 10 signs per mile are installed on one side for the bicycle lane (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Four Foot Bike Lane, Both Sides - No Parking Bike Lane, Both Sides - No Parking	$ 35,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 1 lines * 2 sides + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides	Assumes 1 bicycle lane line and 30 bike and arrow symbols per mile are added to both sides of the roadway to create the bicycle lanes. $330 per bike and arrow symbol includes the materials and installation. Assumes $1.00/LF for thermo from NHDOT. Typically up to 10 signs per mile are installed on each side for bicycle lanes (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Bike Lane, Both Sides - Parking One Side	$ 41,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 3 lines + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides	Assumes 1 bicycle lane line and 30 bike and arrow symbols per mile are added to one side of the roadway and 2 bicycle lane lines and 30 bike and arrow symbols per mile are added to the side with on-street parking. $330 per bike and arrow symbol includes the materials and installation. Assumes $1.00/LF for thermo from NHDOT. Typically up to 10 signs per mile are installed on each side for bicycle lanes (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Bike Lane, Both Sides - Parking Both Sides	$ 46,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 2 lines * 2 sides + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides	Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on both sides of the roadway to create the bicycle lanes. $330 per bike and arrow symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Typically up to 10 signs per mile are installed on each side for bicycle lanes (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Buffered Bike Lane, Both Sides - Parking Both Sides	$ 61,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 3 lines * 2 sides + $1.00/foot * 5280 * 0.4 * 2 sides + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides	Assumes 3 bicycle lane lines and 30 bike and arrow symbols per mile are added on both sides of the road. Assumes a 6" diagonal stripe every 10 feet within a 3' buffer zone on both sides. $330 per bike and arrow symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Typically up to 10 signs per mile are installed on each side for bicycle lanes (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Buffered Bike Lane, Both Sides - Parking One Side	$ 55,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 3 lines + $1.00/foot * 5280 feet * 2 lines + $1.00/foot * 5280 * 0.4 * 2 sides + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides	Assumes 3 bicycle lane lines and 30 bike and arrow symbols per mile are added to one side of the road adjacent to parking and 2 bicycle lane lines and 30 bike and arrow symbols per mile on one side of the road. Assumes a 6" diagonal stripe every 10 feet within a 3' buffer zone on both sides. $330 per bike and arrow symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Typically up to 10 signs per mile are installed on each side for bicycle lanes (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Contraflow Bike Lane	$ 34,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 2 lines + $330/symbol * 30 symbols/mi + $330/symbol * 30 symbols/mi + $250/sign * 10 signs/mi + $250/sign * 5 signs/mi	Assumes double yellow centerline and 30 bike and arrow symbols per mile are added to one side of the road for a contraflow bike lane and 30 shared lane markings symbols per mile are added for the shared travel lane. $330 per bike and arrow or shared lane marking symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Typically up to 10 signs per mile are installed on one side for the contraflow bicycle lanes (includes regulatory and/or warning signs) and up to 5 signs per mile (including regulatory and/or warning signs) are installed for each shared lane marking travel lane. Assumes $250/sign including materials, post, and installation.

	Facility Unit Cost (per mile)	Calculation	Assumptions
Climbing Lane - No Parking	$ 29,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 1 line + $330/symbol * 30 symbols/mi * 1 side + $330/symbol * 30 symbols/mi + $250/sign * 10 signs/mi + $250/sign * 5 signs/mi	Assumes 1 bicycle lane line and 30 bike and arrow symbols per mile are added to one side of the road for a bike lane and 30 shared lane markings symbols per mile are added for the shared travel lane. $330 per bike and arrow or shared lane marking symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Typically up to 10 signs per mile are installed on one side for the bicycle lanes (includes regulatory and/or warning signs) and up to 5 signs per mile (including regulatory and/or warning signs) are installed for each shared lane marking travel lane. Assumes $250/sign including materials, post, and installation.
Shared Lane Markings, One Side	$ 11,000.00	Facility Unit Cost = $330/symbol * 30 symbols/mi + $250/signs * 5 signs/mi * 1 side	Assumes a symbol will be spaced every 30 feet on one side of the roadway. $330 per shared lane marking symbol includes the materials and installation. Typically up to 5 signs per mile (including regulatory and/or warning signs) are installed for each shared lane marking travel lane. Assumes $250/sign including materials, post, and installation.
Shared Lane Markings, Both Sides	$ 22,000.00	Facility Unit Cost = $330/symbol * 30 symbols/mi * 2 sides + $250/signs * 5 signs/mi * 2 sides	Assumes a symbol will be spaced every 30 feet on both sides of the roadway. $330 per shared lane marking symbol includes the materials and installation. Typically up to 5 signs per mile (including regulatory and/or warning signs) are installed for each shared lane marking travel lanes. Assumes $250/sign including materials, post, and installation.
Signed Route	$ 13,000.00	Facility Unit Cost = $250/sign * 25 signs/mi * 2 sides	Assumes that approximately 25 signs (including regulatory, warning, and wayfinding signs) will be used per mile on each side of the roadway. Assumes $250/sign including materials, post, and installation.
Two-Way Cycle Track, One Side	$ 127,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 2 lines + $1.00/foot * 0.33 * 5280 feet + $330/symbol * 60 symbols + $1.00/foot * 5280 * 0.7 + $50/flexpost * 264 posts/mile + $6/SF * 20 * 24 feet * 12 feet + $330/symbol * 20 driveways * 6 symbols + $250/signs * 15 signs/mi	Assumes 2 lane lines, a dashed centerline and 60 bike and arrow symbols per mile are added on one side of the road. Assumes a 6" diagonal stripe every 10 feet within a 5' buffer zone. $330 per bike and arrow symbol includes the materials and installation. Assumes a 20 foot flexpost spacing or approx 264 per mile. $50 per flexpost includes the materials and installation. Assumes green surface color at a cost of $6/SF for intersections or driveways and estimated at 20 intersections or driveways per mile. Assumes the area for the green surface color is 12 feet wide and 24 feet long. Assumes six symbols for every driveway. Typically up to 15 signs per mile are installed on one side for a cycle track (includes regulatory, warning, and/or wayfinding signs). Assumes $250/sign including materials, post, and installation.
Cycle Track, Both Sides	$ 153,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 2 lines * 2 sides + $330/symbol * 30 symbols * 2 sides + $1.00/foot * 5280 * 0.4 * 2 sides + $50/flexpost * 264 posts/mile * 2 sides + $6/SF * 20 * 24 feet * 6 feet * 2 sides + $330/symbol * 20 driveways * 3 symbols * 2 sides + $250/signs * 15 signs/mi * 2 sides	Assumes 2 lane lines and 30 bike and arrow symbols per mile are added on both sides of the road. Assumes a 6" diagonal stripe every 10 feet within a 3' buffer zone on both sides. $330 per bike and arrow symbol includes the materials and installation. Assumes a 20 foot flexpost spacing or approx 264 per mile. $50 per flexpost includes the materials and installation. Assumes green surface color at a cost of $6/SF for intersections or driveways and estimated at 20 intersections or driveways per mile. Assumes the area for the green surface color is 6 feet wide and 24 feet long. Assumes three symbols for every driveway. Typically up to 15 signs per mile are installed on one side for a cycle track (includes regulatory, warning, and/or wayfinding signs). Assumes $250/sign including materials, post, and installation.

	Facility Unit Cost (per mile)	Calculation	Assumptions
Action: Lane Diet, Road Diet			
Grind 1 line	$ 5,300.00	Grind 1 line = $1/foot * 5280 feet * 1 line	Assume eradicating 1 lane line. Assumes grinding costs $1.00/foot
Grind 2 lines	$ 10,600.00	Grind 2 lines = $1/foot * 5280 feet * 2 lines	Assume eradicating 2 lane lines. Assumes grinding costs $1.00/foot
Grind 3 lines	$ 15,900.00	Grind 3 lines = $1/foot * 5280 feet * 3 lines	Assume eradicating 3 lane lines. Assumes grinding costs $1.00/foot
Grind 4 lines	$ 21,200.00	Grind 4 lines = $1/foot * 5280 feet * 4 lines	Assume eradicating 4 lane lines. Assumes grinding costs $1.00/foot
Grind 5 lines	$ 26,400.00	Grind 5 lines = $1/foot * 5280 feet * 5 lines	Assume eradicating 5 lane lines. Assumes grinding costs $1.00/foot
Maintenance Costs			
Replace Signs (on facilities)	$5,000.00	250*20	Assumes 20 regulatory, warning, wayfinding signs per mile of network at $250 per sign over a ten year period.
Sweep bicycle lanes and other on-road facilities	$1,000.00		Assumes that spot sweeping after major rain or snow/ice storms and sweeping of bicycle lanes two times per year averages $1,000 per mile. Total cost depends on the number of on-road Bicycle Facility Network miles that are complete and number of major storm events.
Replace Pavement markings (on-road facilities)	*Paint markings generally need to be repainted every 2 to 3 years.*		
Climbing lanes	$52,920.00	Facility Unit Cost = $0.5 per linear foot * 5280 feet + $250 per bike and arrow * 30 bike and arrow per mile + $250 per shared lane marking * 30 shared lane markings per mile	Assumes all markings repainted and only one line attributed to bike lane at $0.5 per linear foot * 5280 feet + $250 per marking * 30 markings per mile + $250 per shared lane marking * 30 shared lane markings per mile
Shared laned markings	$45,000.00	Facility Unit Cost = $250 per shared lane marking * 30 shared lane markings per mile * 2 sides	Assumes all markings repainted at $250 per shared lane marking * 30 shared lane markings per mile * 2 sides
Bicycle lanes	$55,771.20	Facility Unit Cost = $0.5 per linear foot * 5280 feet * 2 lines * 2 sides + $250 per bike and arrow * 30 bike and arrow per mile * 2 sides	Assumes all markings repainted at $0.5 per linear foot * 5280 feet * 1 lines * 2 sides + $250 per marking * 30 markings per mile * 2 sides
Cycle track	$6,750.00	Facility Unit Cost = $250 per bike and arrow symbol * 9 per mile * 2 sides	Assumes bike and arrow symbols repainted per mile*$250 * 2 sides
Buffered bike lane	$77,148.00	Facility Unit Cost = 2 lines*5280*$0.5* 2 sides)+(1056 LF diagonal lines*2*$0.5)+(30 bike and arrow per mile*$250) + .25* 264 flex post bollards per mile*2 sides*$50	Assumes all markings are repainted at $0.5 per linear foot*5280*2 lines+1056 LF diagonal lines*2 sides*$3 per linear foot +30 bike and arrow per mile*$250 and 25% of flexible bollard posts are replaced.
Global Assumptions			
1) Costs are generally over-estimated.			
2) Cost estimates do not include design. Design costs, which includes construction planning, public process, facility design, and other background work required to implement the project, can generally be estimated at 10% to 20% of the facility construction cost. More controversial projects may have higher design cost.			
3) Cost estimates involving major construction include 20% contingency costs. No costs were estimated for ROW easements or environmental permitting.			
4) Thermoplastic is assumed for all roadway markings.			

Appendix 4.

Detailed Recommendation Tables

NON-INFRASTRUCTURE PRIORITIZATION CRITERIA	High	Med	Low
	3	2	1
Safety Scores in this criteria rate each recommendation's impact on safety of walking and biking conditions. Programs such as safety education or speed enforcement received a high rating. Maintaining signage and infrastructure to current standards received medium ratings. Recommendations with no direct relationship to safety received a low score.	Direct impact on safety	Indirect impact on safety	Little impact on safety
Equity Scores for equity reflect each recommendation's impact on vulnerable or choice-limited users. Vulnerable users include children, seniors, or people with disabilities who may be slower, have mobility, or sensory limitations. Choice-limited users include people who have limited transportation options due to financial, geographic, or physical constraints. Recommendations such as Safe Routes to School or snow clearance received high scores; recommendations that indirectly address equity such as increasing transportation choices received medium scores; recommendations with little direct impact on equity received a low score.	Primary focus is vulnerable or choice-limited users	Indirect impact for vulnerable or choice-limited users	Little impact for vulnerable or choice-limited users
Feasibility Feasibility scores reflect organizational or technical barriers to implementation. A high scoring recommendation can be completed with the lead department's existing technical capacity, such as updating street signage. A medium score requires outside technical assistance or organizational coordination between jurisdictions or public-private collaborations. A low score requires both technical assistance and coordination between multiple parties.	No known organizational or technical barriers	Either an organizational or technical barrier (but not both)	Both organizational and technical barriers
Opportunity Opportunity scores reflect the recommendation's alignment with existing programs or projects. A high score indicates that the recommendation already exists and should be promoted or continued, such as special biking events (Portsmouth Criterium). A medium score indicates a planned recommendation, such as walk audits, or previously implemented program,such as public forums on Complete Streets. A low score indicates a recommendation for a new, unplanned program or policy.	Existing program or policy	Planned or previously implemented program or policy	No known existing or planned program or policy
Lifecycle Cost Lifecycle costs reflect the recommendation's implementation and maintenance costs. A high score requires mainly labor to implement and maintain, such as conducting bike counts. A medium score requires mainly capital to implement and maintain, such as "Watch for Bikes" taxi decals. A low score requires both labor and capital expenditures to implement and maintain, such as adding countdown pedestrian signals at all signalized intersections.	Requires mainly labor to implement and maintain	Requires mainly capital expenditures to implement and maintain	Requires both labor and capital expenditures to implement and maintain

Priority	Recommendation	Average Score	Weighted Safety/Equity	Safety	Equity	Feasibility	Opportunity	Cost	5 Es	Lead Jurisdiction	Associated City Department/Office	Frequency
	Education								Education			
High	**Provide bicycle safety classes for children.** Schools should offer bicycle safety courses as part of the Safe Routes to School program or through other programming. Courses should instruct children how to ride a bicycle, complete a bicycle safety check, safe riding skills, and the rules of the road.	2.4	3.6	3	3	2	1	3	Education	City	School Dept	Ongoing
High	**Provide bicycle safety classes for adults.** Classes should include education on safe riding skills, bicycle safety checks, rules of the road for bicyclists, and bicycle facilities and infrastructure.	2.4	3.4	3	2	3	1	3	Education	Community	Planning Dept	Ongoing
Med	**Provide education and training to staff on bicycle and pedestrian planning and engineering**. These may include online or in person training from Association of Pedestrian and Bicycle Professionals, Pedestrian and Bicycle Information Center, American Planning Association, Institute of Transportation Engineers, or other organizations.	2.4	3.2	2	2	3	2	3	Education	City	Planning Dept	Ongoing
Med	**Provide education and ongoing training to law enforcement personnel on bicycle and pedestrian rights and responsibilities.** These may include online or in person training from Association of Pedestrian and Bicycle Professionals, Pedestrian and Bicycle Information Center, American Planning Association, Institute of Transportation Engineers, or other organizations.	2.0	2.8	2	2	2	1	3	Education	City	Police Dept	Ongoing
Med	**Provide bike maintenance classes for kids and adults.** Bicycle maintenance classes provide basic skills to casual riders to maintain bicycles for transportation and recreation, making bicycling accessible to more people.	2.2	2.8	2	1	3	2	3	Education	City	Planning Dept	Ongoing
Med	**Develop informational brochure on bicycling rules and responsibilities.** These brochures can be distributed to realtors/ businesses/ schools/ City departments to provide information and education about bicycle facilities, laws, and safe riding.	2.0	2.8	2	2	3	1	2	Education	City	Planning Dept	Once
	Encouragement								Encouragement			
High	**Promote Safe Routes to School program**. Safe Routes to School participation can take the form of organizing annual walk events (such as International Walk to School Day), data collection, walking school buses, bike trains, walking and biking curricula, and monthly walk to school events.	2.6	3.8	3	3	2	2	3	Encouragement	City	School Dept	Ongoing
Med	**Apply for Walk- and Bike- Friendly Community designations.** Walk- and Bike-Friendly Community designations can be earned from the League of American Bicyclists and the Pedestrian and Bicyclist Information Center.	2.4	3.2	2	2	3	2	3	Encouragement	City	Planning Dept	Ongoing
Med	**Promote/ Expand Commuter Choice Program.** Businesses should be asked through development agreements or voluntary programs to promote commuting options for employees. Programs may include incentives for walking and biking, a guaranteed ride home program, flexible hours, or other programs to encourage employees to include walking or biking in their commutes. Businesses can join the new Smart Commute Seacoast TMA to take advantage of their emergency ride home program and other tools and resources.	2.2	3.0	2	2	1	3	3	Encouragement	Community		Ongoing
Med	**Review City ordinances related to bicycle registration and parking.** Ordinances should encourage bicycling and protect bicycles and bicyclists rather than discourage use.	2.0	2.8	1	3	2	1	3	Encouragement	City	City Council	Once
Med	**Organize regular walking groups.** The Senior Services Center holds regular walking groups for seniors. The City and other organizations should expand walking groups around other demographics, geographic location, or interests (e.g. mom & baby, Pease lunchtime walks, Strawberry Banke weekly walks, seniors walk with kids to school).	2.2	2.8	1	2	2	3	3	Encouragement	Community	Planning Dept	Ongoing
Low	**Consider accommodations for other non-motorized modes on downtown streets and sidewalks.** City ordinances may be modified to permit skateboards, scooters, and other nonmotorized vehicles on sidewalks in downtown Portsmouth, as appropriate for non-motorized mode speeds	1.8	2.4	1	2	2	1	3	Encouragement	City	Planning Dept	Once
Low	**Organize special biking events.** These may include the popular Portsmouth Criterium, a cyclovia event (where streets are closed to vehicular traffic), midnight bicycle rides, Bike to Work day, or other events that celebrate biking encourage participation, and enhance the visibility of bicycling.	1.8	2.4	1	2	2	3	1	Encouragement	Community	Planning Dept	Seasonal
Low	**Organize regular biking groups.** Two bike shops host regular recreational biking groups. These should be publicized and expanded as a way to introduce new people to bicycling and increase the visibility of bicycling in Portsmouth.	2.0	2.4	1	1	2	3	3	Encouragement	Community	Planning Dept	Ongoing
Low	**Include walking, biking, and transit directions on business websites and brochures.** These directions will help people, especially those not familiar with Portsmouth, know their transportation options and will increase the visibility of walking and biking in Portsmouth.	1.8	2.4	1	2	2	1	3	Encouragement	Community		Ongoing
Low	**Install bike racks on all Coast buses.** Continue program of rack installation and maintenance. Bring racks to community events for people to try out and learn how to use.	1.8	2.4	1	2	2	2	2	Encouragement	COAST	Planning Dept	Ongoing
Low	**Create bench, planter, and other amenity program for retail districts in Portsmouth.** Benches, drinking fountains, planters, etc. make walking more comfortable and appealing. These can be provided by businesses individually or coordinated as a street furniture program.	1.6	2.4	1	3	2	1	1	Encouragement	City		Ongoing
Low	**Develop biking and walking map.** This can be an online map or printed map showing bike routes, distance between major destinations, sites of interest, transit stops, and other amenities such as public restrooms and water fountains.	1.6	2.2	2	1	3	1	1	Encouragement	City	Planning Dept	Ongoing

Priority	Recommendation	Average Score	Weighted Safety/Equity	Safety	Equity	Feasibility	Opportunity	Cost	5 Es	Lead Jurisdiction	Associated City Department/Office	Frequency
Low	**Provide bike valet service at events.** Volunteers can valet bicycles to temporary parking for events, helping reduce overflow of bicycle parking and illegal bicycle parking, and helping to increase the visibility of bicycling.	1.8	2.2	1	1	3	1	3	Encouragement	Community	Planning Dept	Ongoing
Low	**Expand bus routes and frequency.** Increasing transit service enables more walking and biking trips by expanding destinations accessible by foot and bike and by providing an alternate means for a return trip if necessary.	1.4	2.2	1	3	1	1	1	Encouragement	COAST	Planning Dept	Ongoing
Low	**Develop bike friendly business program.** Commute Smart TMA or Seacoast should organize its own program or encourage businesses to apply for an existing bike friendly recognition program (such as the League of American Bicyclists Bike Friendly Business program). These programs recognize businesses that offer programs and amenities to employees to encourage bicycling or walking to work, such as financial incentives, bicycle parking, and office shower facilities.	1.8	2.2	1	1	3	1	3	Encouragement	Community		Ongoing
Low	**Organize special walking events.** Special walking events may include holiday or seasonal themed walks with businesses, walking challenges (distance over time), Walk to Work Days, International Walk to School Day, or other events that encourage people of all ages and abilities to walk.	1.6	2.0	1	1	2	3	1	Encouragement	Community	Planning Dept	Seasonal
Med	**Create bike parking ordinance for new developments.** New developments should be encouraged or required to provide bicycle parking onsite. Refer to the APBP guide to bike parking.	2.0	2.6	1	2	2	2	3	Encouragement	City	Planning Dept	Once
Low	**Develop bike benefit program for shoppers.** This program would provide stickers for bike helmets that entitle bicycle riders to discounts from local retailers. Bike benefit programs may also include special hours on bike event days or special events promoting biking to retail.	1.6	2.0	1	1	2	1	3	Encouragement	Community		Ongoing
Low	**Organize Open Street events.** Streets are closed to traffic and open to the community for exercise, recreation, shopping, and general enjoyment during open street events. These events are an opportunity to include walking and biking education and build visibility for walking and biking programs. Events may be organized by community members and work with the Planning Department to server as a liaison to other city departments.	1.4	1.8	1	1	2	2	1	Encouragement	City		Annual
	Enforcement								Enforcement			
Med	**Revise crash reporting procedures**. Crash reports should be modified to include more accurate information about pedestrian, bicyclist, and motor vehicle precrash maneuvers and crash conditions. This data can help the City to identify the countermeasures for specific types of crashes or locations.	2.2	3.2	3	2	2	1	3	Enforcement	City	Police Dept	Once
Med	**Install speed feedback signs.** Speed feedback signs can be temporary or permanent. They should be placed near school zones or locations that have high incidence of excessive speeds based on a police records or a speed study.	2.2	3.2	3	2	2	2	2	Enforcement	City	Police Dept	Ongoing
Med	**Adopt a progressive ticketing program aimed at drivers and bicyclists.** Progressive ticketing programs employ warnings and education before ticketing as a means to educate road users about traffic laws, new facilities, and safe habits.	2.0	2.8	3	1	2	1	3	Enforcement	City	Police Dept	Ongoing
Low	**Use the Bicycle and Pedestrian Master plan for project and development review.** Compare all proposed capital projects and development reviews to the infrastructure recommendations in the Bicycle and Pedestrian Master Plan for opportunities to implement recommendations.	1.8	2.4	2	1	2	1	3	Enforcement	City	Planning Dept	Ongoing
	Engineering								Engineering			
High	**Require traffic management plans during construction to provide for pedestrian and bicycle travel.** The City should review traffic management plans for signs and detours that maintain pedestrian and bicyclist access around construction zones.	2.6	3.8	3	3	2	2	3	Engineering	City/StateDOT	Public Works Dept	Once
High	**Organize volunteer snow clearance program**. A volunteer snow clearance program recruits community groups, schools groups, sports teams, or community service minded individuals to assist with snow clearance activities. These groups can supplement the City's snow clearance program, focus on routes to transit, or on off-street paths.	2.4	3.6	3	3	2	1	3	Engineering	Community	Planning Dept	Seasonal
High	**Update pedestrian and bicycle design standards for signalized crossings.** Consider countdown signals for crossings, which increase pedestrian safety by informing pedestrians of remaining crossing time and reducing the number of pedestrians still in the crosswalk when opposing traffic receives a green light.	2.4	3.6	3	3	3	2	1	Engineering	City	Public Works Dept	Ongoing
High	**Complete transit access study focused on the siting and conditions of transit stops.** Transit stops should be accessible to disabled persons and connect to sidewalks. Stop locations should be audited for crosswalks and warning signage to improve the visibility and safety of pedestrians using the transit stop.	2.2	3.4	3	3	1	1	3	Engineering	COAST	Planning Dept	Ongoing
High	**Inspect condition of sidewalks, side paths, and pedestrian ramps as part of Pavement Condition review.** Incorporate pedestrian and bicycle infrastructure data points into regular maintenance assessments. Data collected in GIS compatible formats can be cross-checked with the Bicycle and Pedestrian Master Plan.	2.4	3.4	2	3	3	1	3	Engineering	City	Public Works Dept	Ongoing
High	**Improve snow clearance procedures.** Snow clearance activities should be modified to improve access to pedestrian ramps and crosswalks at intersections and to improve access to pedestrian activation buttons. Snow clearance activities should remove all snow and ice from the sidewalk / crosswalk surfaces as ice and even thin layers of snow cause hazards, especially for people with limited mobility.	2.4	3.6	3	3	3	2	1	Engineering	City	Public Works Dept	Seasonal
Med	**Inspect and restripe bicycle and pedestrian facilities annually.** Pavement markings generally require restriping every 3-5 years to maintain visibility. Pedestrian and bicycle markings should be incorporated into existing inspection programs	2.2	3.2	3	2	3	2	1	Engineering	City	Public Works Dept	Annual
Med	**Extend Complete Streets, Walk-friendly, and Bike-Friendly ordinances to a minimum of five years.** The current policies require re-adoption annually which threatens continuity.	2.2	3.0	2	2	2	2	3	Engineering	City	Planning Dept	Once

Priority	Recommendation	Average Score	Weighted Safety/Equity	Safety	Equity	Feasibility	Opportunity	Cost	5 Es	Lead Jurisdiction	Associated City Department/Office	Frequency
Med	**Provide portable ramps to accommodate wheelchairs over raised/inaccessible doorways.** Macro Polo, a specialty grocery store in Portsmouth, uses a portable ramp to provide access for people in wheelchairs over the raised threshold in its doorway. Portable ramps are a low-cost way to provide wheelchair access.	2.2	3.0	1	3	2	3	2	Engineering	Community		Ongoing
Med	**Organize volunteer path maintenance events. T**he City or other organization should organize volunteers to conduct seasonal maintenance on off-road paths. Maintenance may include trash pickup, sweeping, cleaning of vandalism, and reporting areas in need of more serious maintenance.	2.2	3.0	3	1	3	1	3	Engineering	City/State		Seasonal
Med	**Coordinate with COAST to conduct spot improvements at transit stops.** Improvements may include upgrading signage, installing shelters or seating, lighting, route maps, and schedules.	2.0	3.0	2	3	2	2	1	Engineering	COAST	Planning Dept	Annual
Med	**Require installation of wheel guards on heavy vehicles.** Wheel guards prevent bicyclists from being pulled under the wheels of heavy vehicles in a crash. The City should retrofit vehicles operated by the City or under contract with the City, such as waste removal, construction or maintenance vehicles.	2.0	2.8	3	1	3	1	2	Engineering	City	Public Works Dept	Ongoing
Med	**Require restoration of all pedestrian and bicycle pavement markings after street utility repairs.** Include pavement markings as part of inspection list for utility repairs. Supply pavement marking plans with street opening permits.	2.2	2.8	2	1	3	2	3	Engineering	City	Public Works Dept	Ongoing
Med	**Update pedestrian and bicycle signage and markings to current standards.** The Manual on Uniform Traffic Control Devices (MUTCD) provides guidance on retroreflectivity, messaging, location, and color for pedestrian and bicycle signage and markings. Current edition is 2009.	2.0	2.8	2	2	3	2	1	Engineering	City	Planning Dept	Ongoing
Med	**Include on- and off-road bicycle facilities in maintenance programs.** Bike lanes and off road paths should be cleared of debris and snow, year-round. Bicycle facilities should be added to street sweeping and snow clearance programs.	1.8	2.6	3	1	2	2	1	Engineering	City	Planning Dept	Once
Low	**Install public bike maintenance stations.** Public maintenance stations allow bicyclists to fill tires with air and complete minor repairs. These stations offer convenience to bicyclists and increase the visibility of bicycling in the community.	1.8	2.4	2	1	3	1	2	Engineering	City	Public Works Dept	Ongoing
Low	**Develop mobile or online application to report issues to the City.** A mobile app allows citizens to report maintenance needs such as potholes, sidewalk cracks, missing curb ramps, snow clearance, bike parking requests, or other infrastructure issues that impact walking and biking. An app can help the City track work orders and target maintenance to high-demand locations.	1.4	2.2	2	2	1	1	1	Engineering	City	Public Works Dept	Once
Low	**Create shared parking ordinance.** The City should implement shared parking allowances. This policy will optimize parking supply in existing surface lots and improve the pedestrian environment by fostering more pedestrian friendly land-use and scale.	1.8	2.2	1	1	2	2	3	Engineering	City	Planning Dept	Once
Low	**Install bicycle and pedestrian wayfinding.** Bicycle and pedestrian wayfinding should include navigation to popular destinations, time and/or distance to destination. This should be integrated with Citywide wayfinding plan for all transportation modes.	1.6	2.0	1	1	3	2	1	Engineering	City	Planning Dept	Ongoing
Low	**Create a bicycle parking program.** The City should create a bike parking request system and install new bike racks and bike parking corrals in areas of high demand.	1.4	1.8	1	1	2	2	1	Engineering	City	Public Works Dept	Annual
	Evaluation								Evaluation			
High	**Collect bicycle and pedestrian crash data annually.** The City should collect data bicycle and pedestrian crashes. Crash reports should be modified to include information specific to pedestrian and bicycle crashes (see recommendation regarding crash reports.) Law enforcement may need training on new procedures.	2.6	3.6	3	2	3	2	3	Evaluation	City	Planning Dept	Annual
High	**Establish a standing pedestrian and bicycle advisory committee.** A bicycle and pedestrian advisory committee can assist the City in evaluating and sustaining walking and biking policies and programs.	2.6	3.6	2	3	3	2	3	Evaluation	City	Planning Dept	Ongoing
Med	**Review and update the Bicycle and Pedestrian Master Plan every two years.** The plan will require updates as conditions change over time.	2.4	3.2	2	2	3	2	3	Evaluation	City	Planning Dept	Every two years
Med	**Collect and analyze bike counts.** The City should complete annual counts of bicyclist volumes at key locations throughout the City to track bicycle use.	2.4	3.2	2	2	3	2	3	Evaluation	City	Planning Dept	Annual
Med	**In accordance with the Complete Street policy, provide an annual report on the impact of same policy.** Audit complete projects and note the frequency and type of exemptions.	2.4	3.2	2	2	3	2	3	Evaluation	City	Planning Dept	5 years
Med	**Conduct walking audits annually.** A walking audit is a method to determine if neighborhoods or specific routes meet walkability criteria, such as safety, connectivity, accessibility, comfort, cleanliness, and maintenance. Walk audits should be completed near schools or other high demand locations.	2.4	3.2	1	3	3	2	3	Evaluation	City	Planning Dept	Annual
Med	**Review recommended spot improvements and bike boulevards for potential near-term trial improvements.** Some recommendations may be candidates for temporary or low-cost interim improvements. This will allow the City to try out recommendations before construction funding is available.	2.2	3.0	3	1	3	1	3	Evaluation	City	Planning Dept	Ongoing
Low	**Establish a vehicle miles travelled (VMT) reduction target.** The City should set a target VMT reduction percentage by a specific date. This will provide a benchmark for the Complete Streets policy. VMT may be measured by AADT.	1.8	2.2	1	1	3	1	3	Evaluation	City	Planning Dept	5 years

Priority	Recommendation	Average Score	Weighted Safety/Equity	Safety	Equity	Feasibility	Opportunity	Cost	5 Es	Lead Jurisdiction	Associated City Department/Office	Frequency
Low	**Establish bicycle/pedestrian mode share goals.** The City should set target mode shares for walking and biking. Modeshare can be tracked through census data or local surveys.	1.8	2.2	1	1	3	1	3	Evaluation	City	Planning Dept	5 years
Low	**Conduct a feasibility study for bike share.** Bike share programs can increase bicycle mode share, provide an amenity to visitors, and complement existing transit.	1.4	2.0	1	2	1	1	2	Evaluation	City	Planning Dept	Once

INFRASTRUCTURE PRIORITIZATION CRITERIA	High	Med	Low
	3	**2**	**1**
Safety Scores in this criteria rate each recommendation's impact on safety of walking and biking conditions. Separated bicycle facilities on high volume streets received a high rating. Adding signed routes for bicycling on appropriate streets received medium ratings. Recommendations with a minor impact on safety received a low score.	Serious safety issue	Moderate safety issue	Minor safety issue or does not address safety
Connectivity Scores in this criteria rate each recommendation's impact on completing gaps and improving the connectivity of the streets and paths throughout the city. High ranking scores address high demand connections or connections with few alternative routes. Medium-ranked recommendations improve minor connections within the bicycle or pedestrian network. Low scoring recommendations do not significantly improve the city's nonmotorized network.	Critical connection in city or regional bicycle or pedestrian network	Minor connection in city or regional bicycle or pedestrian network	Not a significant component of the city or regional bicycle and pedestrian network
Equity Scores for equity reflect each recommendation's impact on vulnerable or choice-limited users. Vulnerable users include children, seniors, or people with disabilities who may be slower or have mobility or sensory limitations. Choice-limited users include people who have limited transportation options due to financial, geographic, or physical constraints. Recommendations for facilities near schools or neighborhoods with high populations of low-income or elderly residents received high scores; recommendations that indirectly address equity such as improving visibility for pedestrians at crosswalks received medium scores; recommendations with little direct impact on equity received a low score.	Primary focus is vulnerable or choice-limited users	Indirect impact for vulnerable or choice-limited users	Little impact for vulnerable or choice-limited users
Feasibility Feasibility scores reflect organizational or technical barriers to implementation. A high scoring recommendation can be completed with the lead department's existing technical capacity, such as updating street signage. A medium score requires outside technical assistance or organizational coordination between jurisdictions or public-private collaborations. A low score requires both technical assistance and coordination between multiple parties.	No known organizational or technical barriers	Either an organizational or technical barrier (but not both)	Both organizational and technical barriers
Capital Improvement Plan Capital Improvement Plan scores reflect the projected timeframe of the recommendation. A high score indicates that the recommendation is in the City's Capital Improvement Plan or routine maintenance and scheduled to begin in the next three years. A medium score indicates the recommendation is in the City's Capital Improvement Plan, a planned standalone project, or routine maintenance and is scheduled to begin in over three years. A low score indicates a recommendation for a new, unplanned project.	Aligns with existing program or project in next 3 years	Aligns with planned program or project in over 3 years	No related or planned initiative
Lifecycle Cost Lifecycle costs reflect the recommendation's implementation and maintenance costs.	Low cost to implement and maintain	Medium cost to implement and maintain	High cost to implement and maintain

Project ID	Sub-Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To	Weighted Score	Safety	Connectivity	Equity	Feasibility	Capital Improvement Plan	Lifecycle Cost
1	4	Bike/Ped	2A/B:Lafayette	High	**Hampton Branch Trail, Phase 2**	Major regional trail connection, existing CIP project, pending State acquisition of former rail ROW. Trail provides long distance route from Hampton to Portsmouth.	Hampton Branch Trail	Greenland Line	NH33	3.8	3	3	3	2	2	1
1	31	Spot	4A/B:Greenland/Borthwick, 2A/B:Lafayette	High	**Hampton Branch Trail, Phase 2**	Trail access location	Hampton Branch Trail	Banfield Rd	NA	3.8	3	3	3	2	2	1
1	32	Spot	4A/B:Greenland/Borthwick, 2A/B:Lafayette	High	**Hampton Branch Trail, Phase 2**	Trail access location	Hampton Branch Trail	Ocean Rd	NA	3.8	3	3	3	2	2	1
2	4	Bike/Ped	2A/B:Lafayette	Low	**Hampton Branch Trail connection at Ocean Rd**	Widen sidewalk with reconstruction to create low-stress sidepath connection from Hampton Branch Trail to Lafayette Rd.	Ocean Rd	Lafayette Rd	Hampton Branch Trail	2.8	2	2	2	1	1	3
3	1	Bike	2B:Lafayette	Low	**On-road route to Rye**	Shared-lane markings provide guidance for experienced cyclists on constrained roadway.	Lang Rd	Rye Line	Lafayette Rd	2.7	2	2	1	3	1	2
4	1	Bike	2B:Lafayette	Low	**Hampton Branch Trail connection at Heritage Ave**	Bike lane retrofit on Heritage Ave. Long term, boardwalk/path connection from Heritage Ave at Banfield Rd directly to trail on undeveloped land.	Heritage Ave	Lafayette Rd	Banfield Rd	2.3	1	2	1	3	1	2
5	4	Bike/Ped	2A/B:Lafayette	High	**Hampton Branch Trail connection at Constitution Ave**	Sidepath with reconstruction in existing ROW - mostly undeveloped land.	Constitution Ave	Hampton Branch Trail	Lafayette Rd	3.8	3	3	3	1	1	3
6	4	Bike/Ped	2A/B:Lafayette	Med	**Lafayette Rd alternative connection to Walmart**	Bike lanes and sidewalks two sides on West Rd. Short sidepath connection to signed route on Water Country service road. New path connection punches through to Walmart parking lot from Constitution Rd.	Walmart Path, Water Country Rd, West Rd	Constitution Ave	Walmart Sidewalk	3.5	3	3	2	1	1	3
7	4	Bike/Ped	2A/B:Lafayette	High	**Lafayette Rd Complete Street reconstruction**	Based on NHDOT existing Rte 1 corridor study, construct sidepaths on each side of road in available ROW. No alteration of existing traffic patterns necessary.	Lafayette Rd	Rye Line	Andrew Jarvis Dr	4.2	3	3	3	2	2	3
7	31	Spot	2A/B:Lafayette	High	**Lafayette Rd Complete Street reconstruction**	Add ADA-compliant crosswalks and actuated signal to cross Lafayette Rd. Safe route to Portsmouth Early Education Program (PEEPS).	Lafayette Rd	Campus Dr	NA	4.2	3	3	3	2	2	3
7	32	Spot	2A/B:Lafayette	High	**Lafayette Rd Complete Street reconstruction**	Add ADA-compliant crosswalks and pedestrian signals to all legs of intersections with sidepath reconstruction.	Lafayette Rd	Elwyn Rd	NA	4.2	3	3	3	2	2	3
7	33	Spot	2A/B:Lafayette	High	**Lafayette Rd Complete Street reconstruction**	Existing intersection improvement. Add ADA-compliant crosswalks and pedestrian signals with construction of sidepath.	Lafayette Rd	Heritage Ave	NA	4.2	3	3	3	2	2	3
7	34	Spot	2A/B:Lafayette	High	**Lafayette Rd Complete Street reconstruction**	Add ADA-compliant crosswalks and pedestrian signals with construction of sidepath and extension of Longmeadow Rd.	Lafayette Rd	Ocean Rd	NA	4.2	3	3	3	2	2	3
7	35	Spot	2A/B:Lafayette	High	**Lafayette Rd Complete Street reconstruction**	Add ADA-compliant crosswalks and pedestrian signals on traffic lights with sidepath construction. Remove slip lanes on White Cedar Blvd with reconstruction of Lafayette Rd.	Lafayette Rd	White Cedar Blvd	NA	4.2	3	3	3	2	2	3
7	36	Spot	2A/B:Lafayette	High	**Lafayette Rd Complete Street reconstruction**	Add ADA-compliant crosswalks and pedestrian signals to all legs of intersections with sidepath reconstruction.	Lafayette Rd	Wilson Rd	NA	4.2	3	3	3	2	2	3
8	1	Bike	2B:Lafayette	Med	**Elwyn Park traffic calming**	Bike boulevard with traffic calming at key intersections slows drivers and provides connection to Dondero School.	Harding, Rd., Hoover Dr, F.W. Hartford Dr, T.J. Gamester Dr.,McKinley Rd	Lafayette Rd	Elwyn Rd	3.5	2	2	3	2	2	3
8	2	Ped	2A:Lafayette	Med	**Elwyn Park traffic calming**	Sidewalk with traffic calming at key intersections slows drivers and provide connection to Dondero School.	Harding Rd, Van Buren Rd, Filmore Rd, Adams Ave, Taft Rd, Wilson Rd	Adams Ave	Elwyn Rd	3.5	2	2	3	2	2	3
8	31	Spot	2A/B:Lafayette	Med	**Elwyn Park traffic calming**	Add curb extensions for pedestrian visibility.	Filmore Rd	Van Buren Ave	NA	3.5	3	2	2	2	2	3
8	32	Spot	2A/B:Lafayette	Med	**Elwyn Park traffic calming**	Add curb extensions for pedestrian visibility.	McKinley Rd	Van Buren Ave	NA	3.5	3	2	2	2	2	3
10	4	Bike/Ped	4A/B:Greenland/Borthwick, 2A/B:Lafayette	High	**Low-stress connection to YMCA and neighborhoods**	Existing CIP project. Sidepath with acquired ROW to create critical north-south connection between Middle Rd and Lafayette Rd. Sidewalk on one side from Lafayette to Mirona Rd.	Peverly Hill Rd	Lafayette Rd	Middle Rd	4.2	3	3	3	1	3	3
11	3	Spot	2A/B:Lafayette	High	**Elwyn Rd Improvements**	Add actuated signal, and ADA-compliant crosswalks with sidepath construction on Elwyn Rd.	Elwyn Rd	Harding Rd	NA	3.8	3	3	3	1	1	3
11	4	Bike/Ped	2A/B:Lafayette	High	**Elwyn Rd Improvements**	Sidepath on north side of Elwyn Rd. Coordinate with Forestry Center for potential placement inside Forestrry Center property from Lafayette Rd to Harding Rd. Major reconstruction with potential parcel acquisition or easements from Harding Rd to Rye Line.	Elwyn Rd	Lafayette Rd	Rye Line	3.8	3	3	3	1	1	3
12	3	Spot	2A/B:Lafayette, 5A/B:South	High	**Sagamore Rd Complete Street reconstruction**	Add pedestrian signal at intersection. Add ADA-compliant crosswalks on south and east legs of intersection with construction of sidewalk on south side of South St.	Sagamore Ave	South St	NA	4.2	3	3	3	1	3	3
12	4	Bike/Ped	2A/B:Lafayette, 5A/B:South	High	**Sagamore Rd Complete Street reconstruction**	Existing CIP project. Bike lanes and sidewalk one-side from South St to Rye provide a route into and out of town and connections to high demand route on Rte 1B.	Sagamore Rd	South St	Rye Line	4.2	3	3	3	1	3	3
13	4	Bike/Ped	2A/B:Lafayette, 5A/B:South	High	**Elwyn Rd Alternative Route**	Shared-use path through Urban Forestry Center connecting to Gosport Rd/Odiorne Point partially through existing utility easement. Signed bicycle route on Gosport Rd/Odiorne Point to connect to Sagamore Rd.	Urban Forestry Center easement, Gosport Rd, Odiorne Point	Elwyn Rd	Sagamore Rd	3.8	3	3	3	1	1	3
14	3	Spot	2A/B:Lafayette, 5A/B:South	High	**Safe Route to High School**	Add ADA-compliant crosswalk for crossing at Jones Ave.	Sagamore Ave	Jones Ave	NA	4.2	3	3	3	2	2	3
14	4	Bike/Ped	2A/B:Lafayette, 5A/B:South	High	**Safe Route to High School**	Shared-use path on unconstructed ROW at Jones Ave and bike boulevard on Jones Ave to Broad St. Sidewalks on two-sides on Jones Ave to Broad St. Bike lanes on Andrew Jarvis Dr.	Jones Ave, Summit Ave, High School Connector, Andrew Jarvis Dr	Broad St	Andrew Jarvis Dr	4.2	3	3	3	2	2	3
15	1	Bike	5B:South	Low	**Broad St bike boulevard**	Bike boulevard with traffic calming at key points on Broad St and Highland St from Jones Ave to Middle St. Low-stress alternative to Sagamore Ave. Forms connection to high school with Jones Ave.	Jones Ave, Broad St	Sagamore Ave	South St	3.0	2	2	3	2	1	1
16	1	Bike	6B:Downtown/West End, 5B:South	Med	**Cabot St, Highland St, Broad St bike boulevard**	North-south neighborhood route to Hampton Branch Trail. Bike boulevard with traffic calming in conjunction with Broad St bike boulevard.	Cabot St, Highland St, Broad St	South St	Portsmouth-Newington Branch Rail with Trail	3.3	3	2	2	2	2	2
16	3	Spot	6A/B:Downtown/West End, 5A/B:South	Med	**Cabot St, Highland St, Broad St bike boulevard**	Add activated signal on Middle St to clear traffic between Cabot St and Highland St enabling low-stress crossing for bike boulevard users.	Middle St	Cabot St	Highland St	3.3	3	2	2	2	2	2
16	3	Spot	6A/B:Downtown/West End, 5A/B:South	Med	**Safe Route to St. Patrick School**	Add ADA-compliant crosswalks to all legs of intersection.	Austin St	Cabot St	NA	3.3	3	2	2	2	2	2
17	1	Bike	2B:Lafayette, 5B:South	High	**Lafayette Rd/Middle St bike lanes**	Existing CIP project. Primary north-south connection. Buffered bike lanes from Andrew Jarvis Dr to Wibird St. Consolidate parking to one side in this low-use residential area. Add bike lanes and shared-lane markings from Wibird St to Congress St.	Lafayette Rd, Middle St	Andrew Jarvis Dr	Congress St	4.2	3	3	3	2	3	2
17	2	Ped	2A:Lafayette, 5A:South	High	**Lafayette Rd/Middle St improvements**	Add sidewalk on one side on Lafayette Rd to connect existing sidewalks on Lafayette Rd and Greenleaf Ave to high school.	Lafayette Rd	Greenleaf Ave	South St	4.2	3	3	3	2	3	2
17	3	Spot	6A/B:Downtown/West End	High	**Lafayette Rd/Middle St improvements**	Construct curb extensions with ADA-compliant crosswalks.	Middle St	Richards Ave	NA	4.2	3	3	3	2	3	2
18	1	Bike	4B:Greenland/Borthwick, 2B:Lafayette, 5B:South	Low	**Connection to Portsmouth Plains Field**	Bike lanes on Middle Rd from Lafayette Rd to park. Shared-lane markings on South St for additional connection. Parking removal may be necessary on some blocks where off-street parking already exists.	Middle Rd, South St	Middle St, Lafayette Rd	Peverly Hill Rd	2.8	2	2	2	2	1	2

Project ID	Sub-Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To	Weighted Score	Safety	Connectivity	Equity	Feasibility	Capital Improvement Plan	Lifecycle Cost
19	3	Spot	4A/B:Greenland/Borthwick	High	**Hampton Branch Trail Connection at Middle Rd**	Remove existing crosswalk and replace with ADA-compliant crosswalk perpendicular to roadway with extension of existing sidewalk on Middle Rd. Add pedestrian countdown signal. Consider decrease of turning radii on Peverly Hill Rd.	Middle Rd	Peverly Hill Rd	NA	4.2	3	3	3	3	3	1
19	4	Bike/Ped	4A/B:Greenland/Borthwick	High	**Hampton Branch Trail Connection at Middle Rd**	Widen existing sidewalk on south side of Portsmouth Plains Field for sidepath connection from Peverly Hill Rd to Hampton Branch Trail. Provide sidepath connection through future athletic fields with parking access for trail users.	Middle Rd, Portsmouth Plains	Peverly Hill Rd	Hampton Branch Trail	4.2	3	3	3	3	3	1
20	4	Bike/Ped	4A/B:Greenland/Borthwick	High	**Hampton Branch Trail Connection at NH 33**	Provide trail link to existing sidewalk at NH 33 overpass. Widen existing sidewalk for sidepath from trail to Greenland Rd. Reconstruct sidewalk on Greenland Rd. Bike boulevard on Greenland Rd requires traffic calming near intersection with NH 33 to provide low-stress connection to Borthwick Ave over existing pedestrian bridge.	NH 33, Greenland Rd	Hampton Branch Trail	Borthwick Ave	4.0	3	3	3	2	1	3
21	1	Bike	4B:Greenland/Borthwick	Med	**Borthwick Ave improvements**	Buffered bike lanes with travel lane narrowing (lane diet) on Borthwick Ave from Greenland Rd to Hospital. Bike lanes on Borthwick Ave east of hospital. Some road widening in existing ROW may be required east of the Hospital.	Borthwick Ave	Route 1 Bypass	Route 33	3.5	2	3	3	1	1	3
21	2	Ped	4A:Greenland/Borthwick, 1A:North	Med	**Borthwick Ave improvements**	Add sidewalk on one side near hospital to connect to existing sidewalk network. Add sidewalks on two sides on approach to Route 1 Bypass to provide ADA-compliant bus stops in front of hotel. Road widening necessary in existing ROW.	Borthwick Ave	Portsmouth Regional Hospital	Route 1 Bypass	3.5	2	3	3	1	1	3
21	31	Spot	4A/B:Greenland/Borthwick, 1A/B:North	Med	**Borthwick Ave improvements**	Add ADA-compliant crosswalks and pedestrian signals with sidewalks on all legs of intersection.	Route 1 Bypass	Borthwick Ave	NA	3.5	2	3	3	1	1	3
21	32	Spot	4A/B:Greenland/Borthwick, 1A/B:North	Med	**Borthwick Ave improvements**	Add midblock ADA-compliant crosswalk and warning signage for bus stop crossing.	Borthwick Ave	Route 1 Bypass	NA	3.5	2	3	3	1	1	3
22	3	Spot	6A/B:Downtown/West End, 4A/B:Greenland/Borthwick	Med	**Portsmouth-Newington Branch Rail with Trail**	Add trail crossing and access point to bike boulevard on Cabot St.	Portsmouth-Newington Branch Trail	Cabot St	NA	3.3	3	3	2	1	2	1
22	4	Bike/Ped	6A/B:Downtown/West End, 4A/B:Greenland/Borthwick	Med	**Portsmouth-Newington Branch Rail with Trail**	Construct shared-use path alongside active rail line to complete major regional connection from Hampton Branch Trail to proposed sidepath on Market Street.	Portsmouth-Newington Branch Rail with Trail	Barberry Ln	Market St	3.3	3	3	2	1	2	1
23	4	Bike/Ped	6A/B:Downtown/West End	High	**Maplewood Ave Complete Street reconstruction**	Existing project. Reduce the number of travel lanes to calm traffic and add bike lanes from Congress St to rail crossing. Widen sidewalks and add curb extensions wherever feasible.	Maplewood Ave	Congress St	Rail Crossing	3.8	3	3	2	2	3	2
23	31	Spot	6A/B:Downtown/West End	High	**Maplewood Ave Complete Street reconstruction**	Existing project. Add curb extensions with sidewalk widening on Maplewood Ave where feasible.	Maplewood Ave	Deer St	NA	3.8	3	3	2	2	3	2
23	32	Spot	6A/B:Downtown/West End	High	**Maplewood Ave Complete Street reconstruction**	Existing project. Add curb extensions with sidewalk widening on Maplewood Ave where feasible.	Maplewood Ave	Hanover St	NA	3.8	3	3	2	2	3	2
23	33	Spot	6A/B:Downtown/West End	High	**Maplewood Ave Complete Street reconstruction**	Existing project. Add concurrent signal phasing and curb extensions with sidewalk widening on Maplewood Ave where feasible.	Maplewood Ave	Congress St	NA	3.8	3	3	2	2	3	2
24	1	Bike	1B:North	Med	**Maplewood Ave improvements**	Existing project. Add buffered bike lanes with restriping on Maplewood from Edmond Ave to Central Ave in conjunction with bike boulevards on connecting streets.	Maplewood Ave	Central Ave	Edmond Ave	3.7	2	2	3	3	3	2
24	4	Bike/Ped	1A/B:North	High	**Maplewood Ave improvements**	Existing project. Add bike lanes and sidewalks on one side for high demand route. Reconstruction or addition of sidewalk on 1-side necessary where already existing. Road reconstruction possible within existing ROW. Utility coordination necessary.	Maplewood Ave	Dennett St	Woodbury Ave	3.8	3	3	3	1	1	3
24	31	Spot	1A/B:North	High	**Maplewood Ave improvements**	Study narrowing turning radii at intersection. Add ADA-compliant crosswalks with addition of curbed sidewalk on south side adjacent to truck stop.	Maplewood Ave	Cutts St	NA	3.8	3	3	3	1	1	3
24	32	Spot	1A/B:North	High	**Maplewood Ave improvements**	Study narrowing turning radii at intersection. Add ADA-compliant crosswalks.	Maplewood Ave	Route 1 Ramp	NA	3.8	3	3	3	1	1	3
26	4	Bike/Ped	1A/B:North	Low	**Maplewood Ave to Market St Connection**	Signed route on Central Ave and Cutts St. Construct Sidewalks on two sides fo Central Ave and Cutts St from Maplewood Ave to Ashland St. Widen existing sidepath from Central Ave to Market St. Provide accommodation for bicyclists to cross to proposed sidepath on north side of Market at I-95 on-ramp signal.	Central Ave, Market St Connector	Maplewood Ave	Market St	2.0	1	1	1	2	1	3
27	1	Bike	1B:North	Low	**Albacore Museum access**	Existing project. Add bike lanes on Albacore Museum Access Rd. to deliver visitors to museum via proposed sidepath on Market St. and future bike lanes on Sarah Mildred Long Bridge. Signalized crossing at Market street required.	Albacore Museum Access Rd	Market St	Albacore Museum Access Rd	2.8	3	2	1	1	1	3
27	2	Ped	1A:North	Low	**Albacore Museum access**	Existing project. Add sidewalk on north side of Albacore Museum Access Rd. to deliver visitors to museum via proposed sidepath on Market St. Signalized crossing at Market street required.	Albacore Museum Access Rd	Market St	Albacore Museum Access Rd	2.8	3	2	1	1	1	3
28	3	Spot	1A/B:North	Low	**Maplewood Ave to Market St and Spinnaker Pt shortcut**	Explore feasibility of signal installation for users to cross to proposed path on north side from McGee Dr.	Market St	McGee Dr	NA	2.7	1	3	1	2	1	3
28	4	Bike/Ped	1A/B:North	Low	**Maplewood Ave to Market St and Spinnaker Pt shortcut**	Signed route on McGee Dr and short sidepath connection to proposed sidepath on Market St. Signalized bike/pedestrian crossing of Market St required.	McGee Dr	Maplewood Ave	Market St	2.7	1	3	1	2	1	3
29	1	Bike	1B:North	Low	**Hislop Park access**	Bike Lanes on Kearsarge Way from Market St to Mangrove St. Shared-lane markings direct bicyclists to Hislop Park in constrained ROW.	Kearsarge Way	Market St	Preble Way	3.0	2	2	2	3	1	2
30	1	Bike	1B:North	Low	**Commerce Way business access**	Bike lanes on Portsmouth Blvd and Commerce Way from Market St to Woodbury Ave.	Commerce Way, Portsmouth Blvd	Market St	Woodbury Ave	3.0	3	2	1	1	2	3
30	2	Ped	1A:North	Low	**Commerce Way business access**	Existing project. Sidewalks on two sides on Commerce Way with reconstruction.	Commerce Way	Portsmouth Blvd	Woodbury Ave	3.0	3	2	1	1	2	3
31	4	Bike/Ped	1A/B:North, 6A/B:Downtown/West End	High	**Market St Gateway reconstruction**	Existing project. Wide sidewalk on north side of Market St and bike lanes on both sides.	Market St	I-95	Russell St	3.8	3	3	2	1	3	3
31	31	Spot	1A/B:North, 6A/B:Downtown/West End	High	**Market St Gateway reconstruction**	Add actuated signal and ADA-compliant crosswalks to connect proposed sidepath on north side of Market St to Albacore Museum. Crossing should be wide enough to accommodate bicyclists.	Market St	Albacore Museum Driveway	NA	3.8	3	3	2	1	3	3
31	32	Spot	1A/B:North, 6A/B:Downtown/West End	High	**Market St Gateway reconstruction**	Remove splitter island on Russell St. Narrow roadway of Russel St and decrease turning radius from Market St. Add ADA-compliant crosswalks and pedestrian signals.	Market St	Russell St	NA	3.8	3	3	2	1	3	3
33	1	Bike	6B:Downtown/West End	Low	**Market Street Gateway connection**	Shared-lane markings connect Market St sidepath to downtown.	Market St	Russell St	Hanover St	2.7	1	3	1	3	1	2
34	1	Bike	6B:Downtown/West End	Low	**Downtown connectivity**	Shared-lane markings on Bow St and Chapel St.	Bow St, Chapel St	Penhallow St	Daniel St	2.0	1	1	1	3	1	2
35	1	Bike	6B:Downtown/West End	Med	**Memorial Bridge, Scott Ave existing facility upgrade**	Non-standard bike lane striping from Memorial Bridge reconstruction project to be restriped according to standard designs.	Scott Ave, Harbour Pl, State St, Dutton Ave	State St	Daniel St	3.5	3	3	1	3	2	2
35	3	Spot	6A/B:Downtown/West End	Med	**Memorial Bridge, Scott Ave existing facility upgrade**	Stripe dashed green bike lane through this wide intersection to provide guidance to bicyclists and motorists.	Scott Ave	Daniel St	NA	3.5	3	3	1	3	2	2
36	1	Bike	6B:Downtown/West End	Low	**Existing facility upgrade**	Bike lanes on Daniel St where shared-lane markings currently exist.	Daniel St	Bow St	Market Square	2.7	1	3	1	3	1	2
37	3	Spot	5A/B:South	Low	**Strawberry Banke Museum connection**	Add ADA-compliant crosswalks and curb ramps consistent with shared street design for continuous travel across Hancock St on Washington St.	Hancock St	Washington St	NA	2.2	1	1	3	1	1	1

Project ID	Sub-Project ID	Project Type	Area	Priority	Project Name	Project Description	Streets	Limit From	Limit To	Weighted Score	Safety	Connectivity	Equity	Feasibility	Capital Improvement Plan	Lifecycle Cost
37	4	Bike/Ped	5A/B:South	Low	**Strawberry Banke Museum connection**	Shared-street from State St to Hancock St provides more comfortable space for bicyclists and pedestrians. Narrow sidewalks on this historic street are not ADA-compliant. Signed Route from Pleasant St to Hancock St directs bicyclists on existing low-stress street	Washington St	Pleasant St	State St	2.2	1	1	3	1	1	1
38	4	Bike/Ped	6A/B:Downtown/West End, 5A/B:South	Low	**Court St bike boulevard, Washington St shared street**	Bike boulevard from Middle St to Washington St provides low-stress alternative and completes E-W bike route with State St bike boulevard. Shared street from Washington St to Marcy St with raised intersection on Marcy St. Connection to Museum and Prescott Park.	Court St	Middle St	Marcy St	3.0	3	3	1	2	1	1
38	31	Spot	6A/B:Downtown/West End, 5A/B:South	Low	**Court St bike boulevard, Washington St shared street**	Construct raised intersection with shared street on Court St for bicyclist- and pedestrian-prioritized connection to and from park and museum.	Marcy St	Court St	NA	3.0	3	3	1	2	1	1
38	32	Spot	6A/B:Downtown/West End, 5A/B:South	Low	**Court St bike boulevard, Washington St shared street**	Remove southern leg of intersection. Construct park in front of church with reclaimed roadway space.	Court St	Middle St	NA	3.0	3	3	1	2	1	1
39	1	Bike	6B:Downtown/West End	Med	**State St bike boulevard downtown connectivity**	Bike lanes on Fleet St from State St to Court St connect to bike boulevard on Court St. Contraflow bike lane on State St from Middle St to Fleet St required to make connection to overall route. Travel lane reduction, removal of splitter island, and bike signal may be required.	State St, Fleet St	Middle St	Washington St	3.2	1	1	3	3	3	3
39	3	Spot	6A/B:Downtown/West End	Med	**State St bike boulevard downtown connectivity**	Add bike signal with installation of contraflow bike lane on State St to move bicyclists through intersection of Middle Rd and State St in the reverse direction of motor vehicle traffic.	State St	Middle St	NA	3.2	1	1	3	3	3	3
39	3	Spot	6A/B:Downtown/West End	Med	**State St bike boulevard downtown connectivity**	Remove splitter island on State St to facilitate installation of contraflow bike lane and direct westbound crossing of Middle Rd.	State St	Middle St	NA	3.2	1	1	3	3	3	3
40	1	Bike	6B:Downtown/West End	High	**State St bike boulevard**	Bike boulevard with traffic calming at key locations forms east-west route to downtown.	State St, Cass St, Albany St, Brewery Ln, Jewell Ct	Islington St	Middle St	3.8	3	3	3	2	2	1
40	2	Ped	6A:Downtown/West End	High	**State St bike boulevard**	Add sidewalks to one side on Jewell Ct from Islington St to Brewery Ln. Add sidewalks to one side on Albany St from Brewery Ln to Cass St. Widen sidewalks on Brewery Ln.	Albany St, Brewery Ln, Jewell Ct	Bartlett St	Islington St	3.8	3	3	3	2	2	1
40	3	Spot	6A/B:Downtown/West End	High	**State St bike boulevard**	Install ADA-compliant crosswalk perpendicular to roadway.	State St	Winter St	NA	3.8	3	3	3	2	2	1
41	3	Spot	5A/B:South	Low	**North-south connection to Little Harbour School**	Construct curb extensions with ADA-compliant crosswalks on north side for visibility of pedestrians leaving park.	Rockland St	Leary Field Path	NA	2.8	1	2	3	2	2	1
41	4	Bike/Ped	5A/B:South	Low	**North-south connection to Little Harbour School**	Bike boulevard on Rogers St and Elwyn Ave. Widen existing path in Leary Field. Utility coordination may be required.	Elwyn Ave, Leary Field Path, Rogers St	South St	Court St	2.8	1	2	3	2	2	1
42	1	Bike	5B:South	Med	**Lincoln Ave bike boulevard**	Bike boulevard with traffic calming at key locations forms important east-west neighborhood route and connection to Little Harbour School.	Lincoln Ave, Park St, Mendum Ave	Middle St	Junkins Ave	3.5	3	2	3	2	2	1
42	3	Spot	5A/B:South	Med	**Lincoln Ave bike boulevard**	Add actuated signal at Miller Ave to enhance safety of crossing.	Lincoln Ave	Miller Ave (Rte 1A)	NA	3.5	3	2	3	2	2	1
43	3	Spot	6A/B:Downtown/West End	Low	**Neighborhood connection to Hampton Branch Trail**	Add actuated signal with ADA-compliant crosswalks to make low-stress crossing for bike boulevard.	Middle St.	Mendum Ave	NA	2.8	1	2	3	2	2	1
43	4	Bike/Ped	6A/B:Downtown/West End	Low	**Neighborhood connection to Hampton Branch Trail**	Bike boulevard completes connection from Lincoln Ave bike boulevard to Islington/Hampton Branch Trail. Add sidewalks on two sides where not existing. In conjunction with bike boulevard project to make bike/pedestrian priority street.	Thaxter Rd, Boss Ave, Lawrence St	Islington St	Middle St	2.8	1	2	3	2	2	1
44	1	Bike	6B:Downtown/West End, 4B:Greenland/Borthwick	Med	**Hampton Branch Trail connection via Islington St**	Add bike lanes from Barberry Ln to Thaxter Rd with consolidation of parking to one side where an abundance of off-street parking exists.	Islington St	Barberry Ln	Thaxter Rd	3.2	2	3	2	2	1	2
44	2	Ped	6A:Downtown/West End, 4A:Greenland/Borthwick	Med	**Hampton Branch Trail connection via Islington St**	Add sidewalk on south side of Islington St bridge over Route 1 per reconstruction project currently in progress.	Islington St	Barberry Ln	Thaxter Rd	3.2	2	3	2	2	1	2
45	4	Bike/Ped	6A/B:Downtown/West End	Low	**Connection from Middle Rd to Islington St**	Existing CIP project. Add sidewalks to one-side of Spinney Road. Add shared-lane markings for project extent.	Spinney Rd	Islington St	Middle Rd	2.7	2	2	1	3	1	2
46	1	Bike	4B:Greenland/Borthwick	Low	**Hampton Branch Trail connection from South Rd**	Bike boulevard with traffic calming to discourage cut-through vehicular traffic.	Barberry Ln, Sheffield Rd, Melbourne St, Rutland St	Hampton Branch Trail	Middle Rd	2.8	1	2	2	3	1	3
47	3	Spot	4A/B:Greenland/Borthwick	Med	**Islington neighborhood access**	Narrow intersection, remove slip lane on Barberry Ln to simplify crossing.	Barberry Ln	Islington St	NA	3.2	1	3	3	1	1	3
47	4	Bike/Ped	4A/B:Greenland/Borthwick	Med	**Hampton Branch Trail to Hospital Connection**	Add signed bicycle route and sidewalk one side on Barberry Ln from Islington St to end. Use existing easement and ROW acquisition to construct shared-use path to Borthwick Ave. Alternative connection to WBBX Rd. to Borthwick Ave path connection.	Barberry Ln, Hampton- Borthwick Path Connector	Borthwick Ave	Islington St	3.2	1	3	3	2	1	2
48	1	Bike	6B:Downtown/West End, 1B:North	Med	**North-south connection to Islington St**	Consolidate parking to one side north of Woodbury Ave and add bike lanes. Shared-lane markings complete the tight connection under the rail bridge. Shared-lane markings from Bartlett St to Thaxter Rd provide additional connectivity.	Bartlett St, Islington St	Thaxter Rd	Dennett St	3.2	3	2	2	2	1	2
49	3	Spot	1A/B:North	High	**Cate St connectivity**	Allow pedestrian and bicycle access through gates at all times, short term, before Cate St relocation. Do not allow plowed snow to block access in winter.	Cate St	NA	NA	4.0	3	3	3	1	2	3
49	4	Bike/Ped	1A/B:North	High	**Cate St connectivity**	Add bike lanes and sidewalks on two sides of Cate St and relocated Cate St to be constructed with ROW acquisition or easement and redesign/reconstruction of Cate St.	Cate St, Relocated Cate St	Bartlett St	Route 1 Bypass	4.0	3	3	3	1	2	3
50	1	Bike	4B:Greenland/Borthwick, 3B:Pease	Med	**Route to Pease**	Bike lanes on Sherburne Rd and Greenland Rd. Signed route on Sherburne Rd north of Country Club Rd. directing users to Grafton Rd Trail/Pease	Sherburne Rd, Greenland Rd	Borthwick Ave	Grafton Dr Trail	3.7	3	3	3	2	1	1
50	21	Ped	4A:Greenland/Borthwick, 3A:Pease	Med	**Route to Pease**	Reconstruct sidewalks on Greenland Rd currently in disrepair. Move unsafe crosswalk from corner of Greenland Rd and Borthwick Ave to a more visible location. Remove slip lane from NH 33, extend path from pedestrian bridge and add 90 degree crossing at improved intersection.	Greenland Rd	Sherburne Rd	Harvard St	3.7	3	3	3	2	1	1
50	22	Ped	4A:Greenland/Borthwick, 3A:Pease	Med	**Route to Pease**	Add sidewalk on one side of Sherburn Rd where non-existent for improved connectivity.	Sherburne Rd	Country Club Rd	Grafton Dr Trail	3.7	3	3	3	2	1	1
50	32	Spot	4A/B:Greenland/Borthwick, 3A/B:Pease	Med	**Route to Pease**	Existing crosswalk forces pedestrians to cross road where vehicles have limited sight lines. Remove existing crosswalk, extend sidewalk on south to Greenland Rd intersection and replace crosswalk there (with intersection realignment).	Borthwick Ave	Greenland Rd Pedestrian Bridge	NA	3.7	3	3	3	2	1	1
50	33	Spot	4A/B:Greenland/Borthwick, 3A/B:Pease	Med	**Route to Pease**	Add actuated signal and ADA-compliant crossing for bicycle and pedestrian trail access.	Grafton Dr	Sherburne Rd	NA	3.7	3	3	3	2	1	1
50	34	Spot	4A/B:Greenland/Borthwick, 3A/B:Pease	Med	**Route to Pease**	Remove right-turn slip lane from Greenland Rd turning on to Borthwick Ave. Slip lane complicates intersection and allows motorists to turn at high speeds.	Borthwick Ave	Greenland Rd	NA	3.7	3	3	3	2	1	1
51	4	Bike/Ped	3A/B:Pease	High	**Grafton Dr Trail Connectivity**	Shared-use path on closed portion of Country Club Rd to Grafton Dr. Shared-use path shortcut from Country Club Rd to Transportation Center through utility corridor.	Grafton Dr	Country Club Rd	NA	4.0	3	3	3	1	2	3
51	31	Spot	3A/B:Pease	High	**Grafton Dr Trail Connectivity**	Add actuated signal and ADA-compliant crossing for bicycle and pedestrian trail access.	Grafton Dr	Country Club Rd	NA	4.0	3	3	3	1	2	3
51	32	Spot	4A/B:Greenland/Borthwick, 3A/B:Pease	High	**Grafton Dr Trail Connectivity**	Add ADA-compliant crosswalks, to cross pedestrians to existing sidewalk on east side in order to cross bridge.	Sherburne Rd	Country Club Rd	NA	4.0	3	3	3	1	2	3

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52	4	Bike/Ped	3A/B:Pease	Med	**Greenland route to Pease/downtown**	Connect existing paths with sidepath on south side of Corporate Dr. Reconstruct and widen existing asphalt sidewalks to meet sidepath standards.	Corporate Dr	Grafton Dr Trail	Ashland Rd Shared-use Path	3.7	3	3	2	2	1	3
53	4	Bike/Ped	3A/B:Pease	Med	**Pease improvements**	Sidepath from Ashland Rd to New Hampshire Ave for low-stress commuter access. Reconstruct and widen existing sidewalks to meet sidepath standards.	Corporate Dr, Manchester Sq	Ashland Rd Shared-use Path	New Hampshire Ave	3.5	3	3	2	1	1	3
54	4	Bike/Ped	3A/B:Pease	Med	**Pease improvements**	Sidepath from New Hampshire Ave to Airport for low-stress access. Reconstruct and widen existing sidewalks to meet sidepath standards.	Exeter St	New Hampshire Ave	Airport	3.5	3	3	2	1	1	3
55	3	Spot	3A/B:Pease	High	**Pease improvements**	Add ADA-compliant crosswalk for bus stop access with installation of sidewalk or sidepath on both sides of road.	New Hampshire Ave	Stratham St	NA	3.8	3	3	3	1	1	3
55	4	Bike/Ped	3A/B:Pease	High	**Pease improvements**	Sidepath from Pease Blvd to existing trail on Grafton Dr for low-stress commuter access. Reconstruct and widen existing asphalt sidewalks to meet sidepath standards.	New Hampshire Ave	Pease Blvd	Grafton Dr Trail	3.8	3	3	3	1	1	3
56	4	Bike/Ped	3A/B:Pease	Med	**Pease improvements**	Sidepath from Ashland Rd to New Hampshire Ave for low-stress commuter and business access. Reconstruct and widen existing sidewalks to meet sidepath standards.	International Dr	Corporate Dr	New Hampshire Ave	3.5	3	3	2	1	1	3
57	4	Bike/Ped	3A/B:Pease	Med	**Pease improvements**	Sidepath from Corporate Dr to Pease Blvd for low-stress commuter access. Reconstruct and widen existing sidewalks to meet sidepath standards.	International Dr	Corporate Dr	Pease Blvd	3.5	3	3	2	1	1	3
58	4	Bike/Ped	3A/B:Pease	Med	**Pease to Woodbury Ave connection**	Sidepath on south side of Pease Blvd to Spaulding Tpk exit ramps.	Pease Blvd	Gosling Rd, Spaulding Tpk	New Hampshire Ave	3.5	3	3	1	2	2	3
59	3	Spot	1A/B:North	High	**Pease to Woodbury Ave connection**	Add actuated pedestrian signal near Winsor Rd with ADA-compliant crosswalk.	Pease Blvd	Winsor Rd	NA	3.8	3	3	3	1	1	3
59	4	Bike/Ped	1A/B:North	High	**Pease to Woodbury Ave connection**	Remove travel lane and/or median for two-way cycle track on south side of road from Woodbury Ave to Spaulding Tpk ramps. Install sidewalks on both sides in conjunction with cycle track reconstruction.	Gosling Rd	Woodbury Ave	Pease Blvd, Spaulding Tpk	3.8	3	3	3	1	1	3
60	4	Bike/Ped	1A/B:North	High	**Woodbury Ave Complete Street reconstruction**	Cycle track one-way each side for access to shopping and residential areas. Short term, may be street-level with flexible bollard separation; long term, full reconstruction with permanent separation. Lane narrowing and/or travel lane reduction require. Reconstruct and widen sidewalks on two sides for improved and ADA access to shopping and transit. Short term, make all crosswalks ADA-compliant. Long term, reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Woodbury Ave	Market St	Gosling Rd	3.8	3	3	3	1	1	3
60	31	Spot	1A/B:North	High	**Woodbury Ave Complete Street reconstruction**	Short term, make all crosswalks ADA-compliant. Ensure that pedestrian signal timing is long enough to accommodate slow crossing speeds. Long term, reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Woodbury Ave	Arthur F Brady Dr	NA	3.8	3	3	3	1	1	3
60	32	Spot	1A/B:North	High	**Woodbury Ave Complete Street reconstruction**	Short term, make all crosswalks ADA-compliant. Ensure that pedestrian signal timing is long enough to accommodate slow crossing speeds. Long term, reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Woodbury Ave	Commerce Way	NA	3.8	3	3	3	1	1	3
60	33	Spot	1A/B:North	High	**Woodbury Ave Complete Street reconstruction**	Short term, make all crosswalks ADA-compliant. Ensure that pedestrian signal timing is long enough to accommodate slow crossing speeds. Long term, reconfigure travel lanes and create vegetated center median to facilitate	Woodbury Ave	Durgin Ln	NA	3.8	3	3	3	1	1	3
60	34	Spot	1A/B:North	High	**Woodbury Ave Complete Street reconstruction**	Short term, make all crosswalks ADA-compliant. Ensure that pedestrian signal timing is long enough to accommodate slow crossing speeds. Long term, reconfigure travel lanes and create vegetated center median to facilitate pedestrian and bicycle crossing.	Woodbury Ave	Market St	NA	3.8	3	3	3	1	1	3
61	4	Bike/Ped	1A/B:North	High	**Market St Gateway connection**	Sidepath completes link from downtown to shopping on Woodbury Ave. Provides residents along Market St connections to downtown and shopping.	Market St	Woodbury Ave	I-95	3.8	3	3	3	1	1	3
62	1	Bike	1B:North	Low	**Woodbury Ave connectivity improvements**	Signed route on Granite St from existing pedestrian bridge over Market St. Bike lanes through travel lane narrowing (lane diet) on Woodbury Ave from Granite St to Market St.	Woodbury Ave, Granite St	Market St Pedestrian Bridge	Market St	3.0	3	2	1	3	1	2
63	3	Spot	1A/B:North	High	**Woodbury Ave connectivity reconstruction**	Realign to single right-of-way, remove northern fork of Maplewood Ave and add pocket park in reclaimed roadway space connecting to existing splitter island.	Maplewood Ave	Woodbury Ave	NA	3.8	3	3	3	1	1	3
63	4	Bike/Ped	1A/B:North	High	**Woodbury Ave connectivity reconstruction**	Full reconstruction and road widening within existing ROW permits bike lanes and sidewalks on one-side for high-demand route. Parking reductions may be necessary (off-street residential parking exists).	Woodbury Ave	Rockingham Ave	Granite St	3.8	3	3	3	1	1	3
64	1	Bike	1B:North	High	**Downtown to Pease low-stress connectivity improvements**	Restripe existing non-standard bike lane as buffered bike lane. Long term, upgrade to cycle track with flexposts or more permanent separation.	Woodbury Ave	Dennett St	Rockingham Ave	4.3	3	3	3	3	3	2
64	3	Spot	1A/B:North	High	**Downtown to Pease low-stress connectivity improvements**	Add pedestrian-scale lighting under bridge for visibility at night.	Woodbury Ave	I-95 Ramp	NA	4.3	3	3	3	3	3	2
65	1	Bike	1B:North	High	**Downtown to Pease low-stress connectivity improvements**	Bike boulevard with traffic calming for low-stress connection to Pease and New Franklin School. Vegetated chicanes and mini traffic circles would slow traffic on this long, straight road.	Dennett St	Maplewood Ave	Woodbury Ave	3.8	3	3	3	2	2	1
65	31	Spot	1A/B:North	High	**Downtown to Pease low-stress connectivity improvements**	Add actuated signal to enable low-stress crossing of Woodbury Ave for bicyclists and pedestrians. High volume and speed of vehicular traffic currently creates difficult crossing.	Dennett St	Woodbury Ave	NA	3.8	3	3	3	2	2	1
65	32	Spot	1A/B:North	High	**Downtown to Pease low-stress connectivity improvements**	Add curb extensions and ADA-compliant crosswalks with construction of bike boulevard on Dennett St. Safe Route to New Franklin School.	Dennett St	Stark St	NA	3.8	3	3	3	2	2	1
66	4	Bike/Ped	1A/B:North	Med	**Low-stress route from Market St to Pease**	Bike boulevard with traffic calming at key locations provide central east-west link from Pease to Market St. Add sidewalk on one side for extent of bike boulevard.	Edmond Ave, Sapphire St, Rockingham Ave	Woodbury Ave	Maplewood Ave	3.2	2	2	3	2	2	1
67	1	Bike	1B:North	Med	**Meadow Rd bike boulevard**	Signed route and new shared-use path on existing ROW provide low-stress parallel route to Woodbury Ave.	Echo Ave, Farm Ln, Hillcrest Dr, Longmeadow Ln, Meadow Rd, Rockingham Ave, Shared-use path connection	Rockingham Ave	Woodbury Ave	3.2	3	3	2	1	1	1
68	1	Bike	3B:Pease	Low	**Pease connectivity improvements**	Signed routes on Rye St and Oak Ave connect between proposed sidepaths.	Rye St, Oak Ave	Corporate Dr	International Dr	2.5	2	2	1	1	1	3
68	2	Ped	3A:Pease	Low	**Pease connectivity improvements**	Add sidewalk on one side where non-existent for improved connectivity.	Rye St, Oak Ave	Corporate Dr	International Dr	2.5	2	2	1	1	1	3
69	1	Bike	6B:Downtown/West End	Low	**Russell St and Deer St improvements**	Bike lanes with travel lane narrowing (lane diet) on Russell St and Deer St. Shared lane markings on narrow portion of Deer St from Russels St to Market St.	Russell St, Deer St	Market St	Maplewood Ave	2.0	1	1	1	3	1	2
69	3	Spot	6A/B:Downtown/West End	Med	**Russell St and Deer St improvements**	Reduce turning radii to reduce crossing distance, add curb extensions and ADA-compliant crosswalks.	Russell St	Deer St	NA	3.2	2	2	2	3	3	1
70	4	Bike/Ped	6A/B:Downtown/West End	Med	**Pleasant St/Market Square as bike and pedestrian centerpiece**	Shared streets on Market St and Market Sq with raised intersections slow motorists and discourage through traffic. Pedestrian-only plaza on Pleasant St from Congress St to State St provides central location for programmed events, restaurants, and retail. Accomodate or reroute transit service on all streets.	Market St, Pleasant St, Market Sq	State St	Hanover St	3.2	3	3	2	1	1	1

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70	31	Spot	6A/B:Downtown/West End	Med	**Pleasant St/Market Square as bike and pedestrian centerpiece**	Raised intersection/shared street environment on Market St from Bow St to Hanover St slows motorists and indicates pedestrian priority at a complex intersection. Consider redeveloping parking lot at the corner of Hanover St and Market St or closing access on Market St, reconfiguring, and moving access to Hanover St to simplify intersection. Accomodate or reroute transit service on all streets.	Market St	Bow St	Hanover St	3.2	3	3	2	1	1	1
70	32	Spot	6A/B:Downtown/West End	Med	**Pleasant St/Market Square as bike and pedestrian centerpiece**	Raised intersection/shared street environment on Market Sq from Daniel St to Church St slows motorists and indicates pedestrian priority at a complex intersection with a high volume of pedestrian traffic. Provide well-defined priority space for transit stop and bus traffic. Accomodate or reroute transit service on all streets.	Market Sq	Daniel St	Church St	3.2	3	3	2	1	1	1
71	1	Bike	6B:Downtown/West End, 5B:South	Low	**East Coast Greenway connectivity improvements**	Shared-lane markings on constrained historic corridor remind motorists that bikes may use the full travel lane. Bike lanes on Pleasant St from State St to Court St provide connection to Court St bike blvd. Convert angle parking to parallel parking and add parallel parking on one-side on that block.	Pleasant St, Marcy St, New Castle Ave	New Castle Line	Porter St	2.7	1	3	1	3	1	2
72	1	Bike	5B:South	High	**South St connectivity improvements**	Bike lanes with reconstruction from Broad St to Clough Dr for school/bike blvd conenctivity. Shared-lane markings for remainder of corridor. Roadway should be designed at minimum dimensions with traffic calming to slow traffic to the posted speed limit of 20 mph.	South St	Marcy St	Lafayette Rd	4.0	3	3	3	1	2	3
72	2	Ped	5A:South	High	**South St connectivity improvements**	Add sidewalk on south side of South St. From Lafayette Rd to Sagamore Ave, narrow roadway to minimum travel lane dimensions and add traffic calming so the posted speed of 20 mph matches the design speed more closely.	South St	Marcy St	Lafayette Rd	4.0	3	3	3	1	2	3
72	3	Spot	5A/B:South	High	**South St connectivity improvements**	Realign and narrow intersection to meet Clough Dr. Add curb extensions.	Clough Dr	South St	NA	4.0	3	3	3	1	2	3
73	1	Bike	5B:South	High	**City Hall connectivity improvements**	Climbing lanes on entire length of Junkins Ave. Insufficient width for bike lanes on both sides.	Junkins Ave	South St	Pleasant St	4.0	3	3	3	2	1	3
73	2	Ped	5A:South	High	**City Hall connectivity improvements**	Add sidewalk on one side for improved pedestrian access.	Junkins Ave	Pleasant St	South St	4.0	3	3	3	2	1	3
73	31	Spot	5A/B:South	High	**City Hall connectivity improvements**	Add ADA-compliant crosswalks across City Hall Driveway (both legs) and Junkins Ave with construction of sidewalk on east side of Junkins.	Junkins Ave	City Hall Driveway	NA	4.0	3	3	3	2	1	3
73	32	Spot	5A/B:South	High	**City Hall connectivity improvements**	Add ADA-compliant crosswalks across Pleasant St with construction and reconstruction of sidewalks on Junkins Ave.	Pleasant St	Junkins Ave	NA	4.0	3	3	3	2	1	3
73	33	Spot	5A/B:South	High	**City Hall connectivity improvements**	Add curb extensions to increase pedestrian visibility on South St.	Junkins Ave	South St	NA	4.0	3	3	3	2	1	3
74	4	Bike/Ped	5A/B:South	High	**Parrott Ave park space**	Close Edward St from Parrot Ave Ext.to Junkins Ave and convert ROW to park space. Construct sidepath on south side of Parrott Ave Ext to connect to existing park path for safe route to school and library.	Parrot Ave Ext, Edward St	Junkins Ave	Edward St	4.2	3	3	3	2	2	3
75	4	Bike/Ped	5A/B:South	Low	**Route 1B loop improvements**	Bike lanes and sidewalks on two sides with reconstruction and road widening to improve high-demand route. Coordination with New Castle needed to extend bicycle and pedestrian facilities for entire route.	Wentworth Rd	Sagamore Ave	Rye Line	2.3	2	2	1	1	1	2
76	1	Bike	4B:Greenland/Borthwick	Med	**WBBX Rd to Borthwick Ave connector**	Alternative connection to Barberry Ln/Borthwick Ave path. Add signed route and sidewalk one side on WBBX Rd from Hampton Branch Trail to dead end. Construct shared-use path with ROW acquisition or easement from end of WBBX Rd to Borthwick Ave.	WBBX Rd, Borthwick Path Connection	Hampton Branch Trail	Borthwick Ave	3.2	1	3	3	1	1	3
77	1	Bike	2B:Lafayette	Low	**Banfield Rd reconstruction**	Add bike lanes on Banfield Rd with road widening to provide increased access to the Hampton Branch Rail Trail for neighborhoods on Ocean Rd.	Banfield Rd	Hampton Branch Trail	Ocean Rd	2.8	2	2	2	1	1	3
78	4	Bike/Ped	2A/B:Lafayette	High	**Public Works Department sewer easement shared-use path**	Add shared-use path along existing easement to provide an alternative route to Lafayette Rd.	Public Works Department sewer easement	Hoover Dr	Heritage Ave	3.8	3	3	3	3	1	1
79	1	Bike	6B:Downtown/West End, 1B:North	High	**Maplewood Ave improvements**	Existing project. Restripe existing bike lanes as buffered bike lanes where feasible. Lane and parking width reduction may be required.	Maplewood Ave	Rail Crossing	Dennett St	4.3	3	3	3	3	2	3
79	2	Ped	6A:Downtown/West End, 1A:North	High	**Maplewood Ave improvements**	Reconstruct sidewalks on two sides. Construct sidewalks on one side of bridge.	Maplewood Ave	Rail Crossing	Dennett St	4.3	3	3	3	3	2	3
80	4	Bike/Ped	5A/B:South	Med	**South Mill Pond Path**	Formalize and upgrade existing path as a shared-use path.	South Mill Pond Path	Junkins Ave	Parrott Ave	3.5	1	3	3	3	2	2
81	4	Bike/Ped	6A/B:Downtown/West End, 1A/B:North	Low	**North Mill Pond Path**	Construct shared-use path along south bank of North Mill Pond, per 1997 North Mill Pond Study. This path may serve as an alternative route to the Portsmouth Newington Branch Rail with Trail	North Mill Pond Path	Bartlett St	Maplewood Ave	2.8	2	3	2	1	1	1
82	4	Bike/Ped	4A/B:Greenland/Borthwick	High	**Hampton Branch Trail, Phase 1**	Major regional trail connection, existing CIP project, pending State acquisition of former rail ROW. Trail provides long distance route from Hampton to Portsmouth.	Hampton Branch Trail	NH 33	Barberry Ln	3.8	3	3	3	2	2	1
82	31	Spot	4A/B:Greenland/Borthwick, 2A/B:Lafayette	High	**Hampton Branch Trail, Phase 1**	Trail access location, short-term trail terminus, potential location for off-street parking	Hampton Branch Trail	Barberry Ln	NA	3.8	3	3	3	2	2	1
82	32	Spot	4A/B:Greenland/Borthwick, 2A/B:Lafayette	High	**Hampton Branch Trail, Phase 1**	Trail access location with parking at new Rec Field	Hampton Branch Trail	New Rec Field	NA	3.8	3	3	3	2	2	1
82	33	Spot	4A/B:Greenland/Borthwick, 2A/B:Lafayette	High	**Hampton Branch Trail, Phase 1**	Trail access location	Hampton Branch Trail	WBBX Rd	NA	3.8	3	3	3	2	2	1
83	4	Bike/Ped	1A/B:North	High	**Sarah Mildred Long Bridge/Route 1B Bike Lanes**	Construct sidepath on north side of bridge. If sidepath is not feasible, narrow travel lanes to add bike lanes on both sides of Sarah Mildred Long Bridge/Route 1 Bypass. Add sidewalk to north side.	Sarah Mildred Long Bridge	Albacore Museum Access Rd	Bridge St, Kittery	4.3	3	3	3	3	2	3
109	2	Ped	6A:Downtown/West End, 1A:North	Low	**Bartlett St improvements**	Add sidewalk on one side to enhance connection on this high demand route to Islington St.	Bartlett St	Islington St	Woodbury Ave	2.7	1	1	3	2	1	3
110	2	Ped	6A:Downtown/West End	Med	**Islington St Corridor Plan**	Existing plan. Reconstruct and enhance sidewalks to develop a more vibrant retail area. Construct curb extensions and enhanced crosswalks at key intersections.	Islington St	Maplewood Ave	Spinney Rd	3.5	3	1	3	2	2	3
110	31	Spot	6A/B:Downtown/West End	Med	**Islington St Corridor Plan**	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Cabot St	NA	3.5	3	1	3	2	2	3
110	32	Spot	6A/B:Downtown/West End	Med	**Islington St Corridor Plan**	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Cass St	NA	3.5	3	1	3	2	2	3
110	33	Spot	6A/B:Downtown/West End	Med	**Islington St Corridor Plan**	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Columbia St	NA	3.5	3	1	3	2	2	3
110	34	Spot	6A/B:Downtown/West End	Med	**Islington St Corridor Plan**	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Cornwall St	NA	3.5	3	1	3	2	2	3
110	35	Spot	6A/B:Downtown/West End	Med	**Islington St Corridor Plan**	Existing plan. Realign intersection to connect directly with Jewell Ct.	Bartlett St	Islington St	NA	3.5	3	1	3	2	2	3
110	36	Spot	6A/B:Downtown/West End	Med	**Islington St Corridor Plan**	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Rock St	NA	3.5	3	1	3	2	2	3
110	37	Spot	6A/B:Downtown/West End	Med	**Islington St Corridor Plan**	Existing plan. Align Spinney Rd to 90 degree intersection with Islington St.	Islington St	Spinney Rd	NA	3.5	3	1	3	2	2	3
110	38	Spot	6A/B:Downtown/West End	Med	**Islington St Corridor Plan**	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Summer St	NA	3.5	3	1	3	2	2	3
110	39	Spot	6A/B:Downtown/West End	Med	**Islington St Corridor Plan**	Existing plan. Add curb extensions and enhanced crosswalk treatments.	Islington St	Tanner St	NA	3.5	3	1	3	2	2	3
113	2	Ped	4A:Greenland/Borthwick	Med	**Islington neighborhood access**	Add sidewalk on south side to connect to existing sidewalk at Portsmouth Plains Field.	Islington St	Plains Ave	Essex Ave	3.5	3	3	2	1	1	3
115	3	Spot	2A/B:Lafayette, 5A/B:South	Med	**Greenleaf Ave improvements**	Add crosswalks, ramps, and pedestrian signal. Realign intersection to 90 degree to improve visibility for pedestrians, bicyclists, and motorists.	Lafayette Rd	Greenleaf Ave	NA	3.7	3	2	3	2	1	3
116	2	Ped	5A:South	High	**Library and Middle School improvements**	Construct sidewalks on two sides on Parrott Ave where non-existent.	Parrott Ave	Junkins Ave	Leary Field Path	4.0	3	3	3	1	2	3
116	31	Spot	5A/B:South	High	**Library and Middle School improvements**	Reduce curb radii and add curb extensions for safer travel to Library and Middle School.	Junkins Ave	Parrot Ave	NA	4.0	3	3	3	1	2	3

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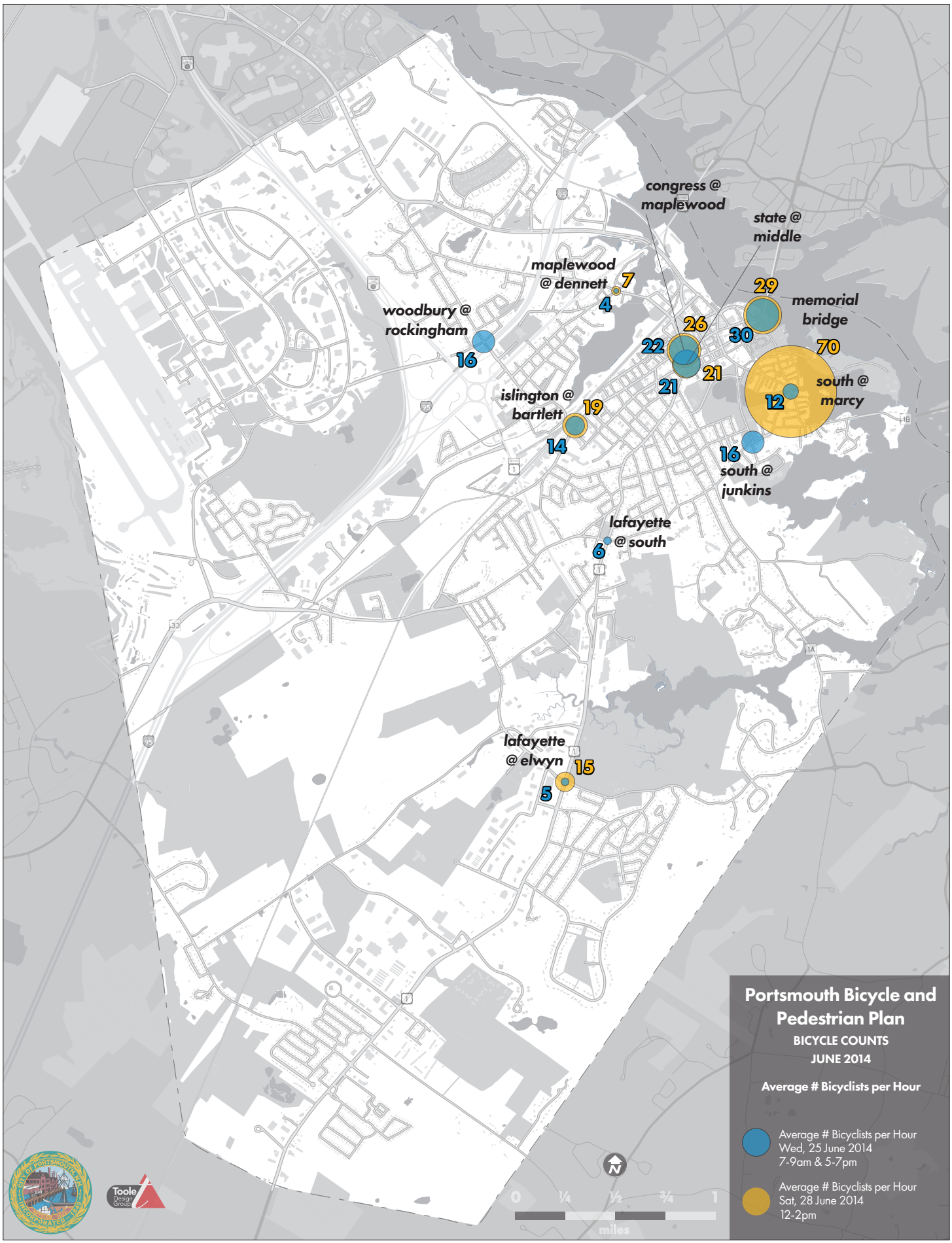
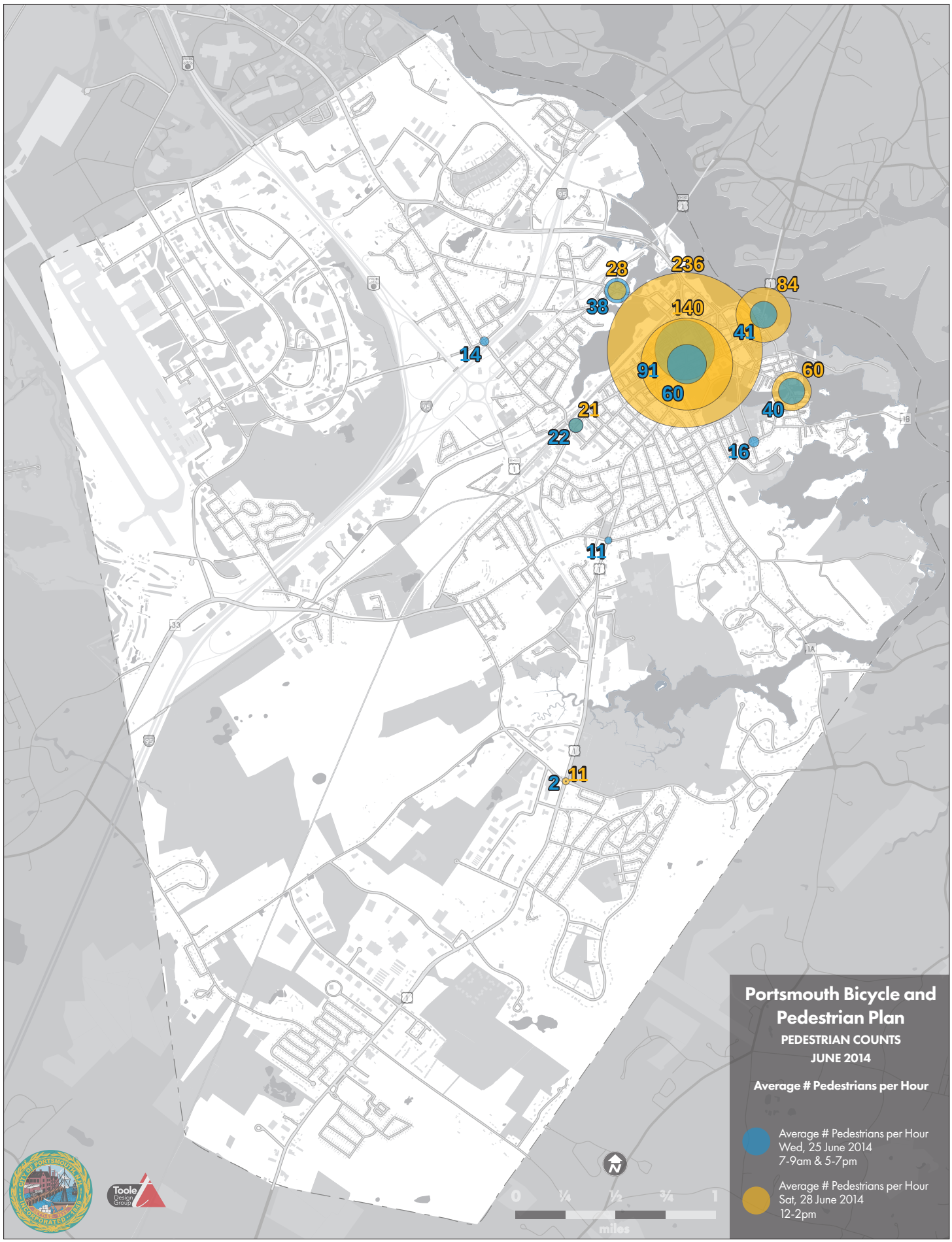
116	32	Spot	5A/B:South	High	**Library and Middle School improvements**	Reduce curb radius on east side of Rogers St.	Rogers St	Parrot Ave	NA	4.0	3	3	3	1	2	3
116	33	Spot	5A/B:South	High	**Library and Middle School improvements**	Realign crosswalk perpendicular to roadway in order to shorten crossing distance.	Parrott Ave	Rogers St	NA	4.0	3	3	3	1	2	3
118	2	Ped	5A:South	High	**City Hall accessibility improvements**	Add sidewalk on one side where missing for pedestrian access. Ensure all crosswalks are ADA-compliant.	City Hall Driveway	Junkins Ave	Junkins Ave	4.0	3	3	3	2	1	3
118	3	Spot	5A/B:South	High	**City Hall accessibility improvements**	Make all crosswalks ADA-compliant and perpendicular to roadway.	City Hall Driveway	NA	NA	4.0	3	3	3	2	1	3
120	2	Ped	5A:South	Med	**Safe route to Little Harbour School**	Add sidewalks on two sides for pedestrian access to school.	Brackett Rd, Brackett Ln	Haven Rd, South St	Brackett Rd Path	3.2	2	2	2	2	2	3
120	3	Spot	5A/B:South	Med	**Safe route to Little Harbour School**	Decrease turning radius on southwest corner of intersection. Install ADA-compliant crosswalk (tactile warning strip and connecting sidewalk facility needed).	Brackett Rd	Clough Dr	NA	3.2	2	2	2	2	2	3
121	21	Ped	5A:South	Med	**Strawberry Banke Museum connectivity and accessibility improvements**	Reconstruct and widen sidewalk on Museum side for ADA compliance and improved access on high-demand route.	Marcy St	Hancock St	Strawberry Banke Museum Parking Lot	3.2	2	2	2	2	2	3
121	22	Ped	5A:South	High	**Strawberry Banke Museum connectivity and accessibility improvements**	Construct sidewalk along edge of parking lot to connect Museum entrance to existing sidewalk on Hancock St.	Strawberry Banke Museum Driveway	Hancock St	Strawberry Banke Museum Entry	4.0	3	3	3	2	1	3
121	31	Spot	5A/B:South	Med	**Strawberry Banke Museum connectivity and accessibility improvements**	Add ADA-compliant crosswalks across Mechanic and Marcy Streets for Prescott Park and Museum access.	Marcy St	Mechanic St	NA	3.2	2	2	2	2	2	3
121	32	Spot	5A/B:South	Med	**Strawberry Banke Museum connectivity and accessibility improvements**	Add ADA-compliant crosswalks across Marcy St for Prescott Park and Museum access with reconstruction of sidewalk.	Marcy St	Strawberry Banke Museum	NA	3.2	2	2	2	2	2	3
122	2	Ped	6A:Downtown/West End	Low	**Downtown pedestrian and retail enhancement**	Widen sidewalk and convert pull-in parking to parallel parking at curb from Penhallow St to Chapel St. Additional space provides for outdoor seating and retail uses. Widen sidewalk on north side of Bow St at Market St to provide ADA-compliant alternative to current stair-only access.	Bow St	Market St	Chapel St	2.2	1	1	2	1	1	3
123	2	Ped	6A:Downtown/West End	Low	**Downtown pedestrian and retail enhancement**	Widen sidewalk and convert pull-in parking to parallel parking at curb. Additional space for high-pedestrian volume and outdoor seating and retail uses.	Congress St	Fleet St	Church St	2.2	1	1	2	1	1	3
125	2	Ped	1A:North	Med	**Safe route to New Franklin School**	Add sidewalks on one side on Central Ave and Myrtle Ave approaching school.	Myrtle Ave, Central Ave	Maplewood Ave	New Franklin School	3.2	2	2	2	2	2	3
125	4	Bike/Ped	1A/B:North	Med	**Safe route to New Franklin School**	Add sidepath on one side of Frankin Dr.	Franklin Dr,	Woodbury Ave	Maplewood Ave, Route 1 Bypass	3.2	2	2	2	2	2	3
126	2	Ped	1A:North	Low	**Safe route to New Franklin School**	Reconstruct sidewalk on Stark St bridge in major disrepair. Add sidewalk on one side with bridge reconstruction.	Stark St	Dennett St	New Franklin School	2.7	2	1	2	1	2	3
128	2	Ped	1A:North	Low	**Rockingham Ave improvements**	Add sidewalk on north side of Rockingham Ave to Woodbury Ave. High speed motor vehicle traffic connection to Spaulding Tpk.	Rockingham Ave	Pease Shared-Use Path	Meadow Rd	2.7	2	2	1	2	1	3
132	2	Ped	4A:Greenland/Borthwick	Low	**Griffin Rd pedestrian access**	Add sidewalk to south side of road for neighborhood and job access.	Griffin Rd	Greenland Rd	End	2.3	1	2	1	2	1	3
135	2	Ped	2A:Lafayette	Med	**Longmeadow Rd neighborhood connectivity**	Add sidewalk on one side to Longmeadow Rd, and Lang Rd from Beechstone Ave to Lafayette Rd for neighborhood access to Lafayette Rd.	Longmeadow Rd, Lang Rd	Lafayette Rd	Beechstone Ave	3.7	3	3	2	2	1	3
135	3	Spot	2A/B:Lafayette	Low	**Lang Rd and Longmeadow Rd intersection improvements**	Add ADA-compliant crosswalk with construction of sidewalks on future intersection of Lang Rd and Longmeadow Rd for neighborhood access.	Lang Rd	Longmeadow	NA	3.0	2	2	2	2	1	3
136	2	Ped	2A:Lafayette	High	**Safe route to Community Campus**	Add sidewalks on two sides for school access.	Campus Dr	Lafayette Rd	End	3.8	3	3	2	2	2	3
137	2	Ped	2A:Lafayette	High	**Wilson Rd transit access**	Add sidewalks on two sides to make transit stops ADA compliant and separated from roadway.	Wilson Rd, Market Basket Plaza Driveway	Lafayette Rd	West Rd	3.8	3	3	2	2	2	3
137	3	Spot	2A/B:Lafayette	High	**Wilson Rd transit access**	Add ADA-compliant crosswalk with construction of sidewalk on Wilson Rd to connect bus stops to retail.	Wilson Rd	Lafayette Rd	NA	3.8	3	3	2	2	2	3
201	31	Spot	1A/B:North	Med	**Neighborhood access improvements**	Ensure pedestrian and bicycle access through gates. Do not allow plowed snow to block access in winter.	Dunlin Way	Blue Heron Dr	NA	3.5	3	3	2	1	3	1
201	32	Spot	1A/B:North	Med	**Neighborhood access improvements**	Ensure pedestrian and bicycle access through gates. Do not allow plowed snow to block access in winter.	Shearwater Dr	Blue Heron Dr	NA	3.5	3	3	2	1	3	1
201	33	Spot	1A/B:North	Med	**Neighborhood access improvements**	Ensure pedestrian and bicycle access through gates. Do not allow plowed snow to block access in winter.	Mangrove St	Spinnaker Way	NA	3.5	3	3	2	1	3	1
203	3	Spot	3A/B:Pease	Low	**Grafton Dr Trail transit connectivity**	Add ADA-compliant crosswalk to access bus stop on south side of Grafton Dr between Aviation Ave and Corporate Drive.	Grafton Dr	Office Driveway	NA	2.7	2	2	1	1	3	2
205	3	Spot	6A/B:Downtown/West End	Med	**State St improvements**	Add curb extensions to reduce crossing distances and increase pedestrian visibility.	State St	Fleet St	NA	3.5	2	3	2	2	3	2
207	3	Spot	6A/B:Downtown/West End	Med	**Chatham St and Summer St intersection improvements**	Narrow intersection. Replace angled parking with parallel on-street parking. Reclaim wide asphalt space in front of church and extend the church plaza, adding a southern curbline to Chatham St.	Chatham St	Summer St	NA	3.3	2	3	2	3	2	1
208	3	Spot	5A/B:South	Med	**Richards Ave and Parrott Ave intersection improvements**	Construct curb extensions with ADA-compliant crosswalks.	Richard Ave	Parrot Ave	NA	3.2	2	3	2	2	2	1
210	3	Spot	6A/B:Downtown/West End	Med	**Safe route to St. Patrick school**	Add curb extensions for pedestrian visibility at Summer St.	Austin St	Summer St	NA	3.2	2	3	2	2	2	1
211	3	Spot	6A/B:Downtown/West End	Low	**Safe route to St. Patrick school**	Add ADA-compliant crosswalks to all legs of intersection.	Austin St	Union St	NA	3.0	2	3	1	2	2	2
214	3	Spot	5A/B:South	Low	**Marcy St at South St intersection improvements**	Align South St to 90 degrees with Marcy St. Use reclaimed roadway space to increase pocket park size on north side of new intersection.	Marcy St	South St	NA	2.8	1	2	2	3	3	1
215	3	Spot	5A/B:South	Low	**Peirce Island Rd at Mechanic St intersection improvements**	Narrow intersection with curbs and sidewalks on Mechanic St. Add ADA-compliant crosswalks across Mechanic St and Peirce Island Rd for park access.	Peirce Island Road	Mechanic St	NA	2.5	2	1	1	2	3	2
216	3	Spot	5A/B:South	Med	**Pleasant St at Livermore St intersection improvements**	Add ADA-compliant crosswalks across Pleasant St for access to Haven Park.	Pleasant St	Livermore St	NA	3.2	2	2	2	2	3	2
218	3	Spot	5A/B:South	Med	**Brackett Rd path lighting**	Add pedestrian-scale lighting to pathway to provide additional light from dusk to dawn.	Brackett Rd Path	Clough Dr	NA	3.2	2	3	2	2	2	1

Appendix 5.

Bicyclist and Pedestrian Count Table and Maps


congress @ maplewood
state @ middle
maplewood @ dennett
7
4
29
memorial bridge
woodbury @ rockingham
16
26
30
70
22
21
21
south @ marcy
12
islington @ bartlett
19
14
16
south @ junkins
lafayette @ south
6
lafayette @ elwyn
15
5
Portsmouth Bicycle and Pedestrian Plan
BICYCLE COUNTS
JUNE 2014
Average # Bicyclists per Hour
Average # Bicyclists per Hour
Wed, 25 June 2014
7-9am & 5-7pm
Average # Bicyclists per Hour
Sat, 28 June 2014
12-2pm
0
¼
½
¾
1
miles
Toole Design Group


28
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2
Portsmouth Bicycle and Pedestrian Plan
PEDESTRIAN COUNTS
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Sat, 28 June 2014
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1
miles
Toole Design Group

	2014											
	Wednesday 7am-9am				Wednesday 4pm to 6pm				Saturday 12 to 2pm			
	Pedestrians		Bicyclists		Pedestrians		Bicyclists		Pedestrians		Bicyclists	
Location	June	Sept	June	Sept	June	Sept	June	Sept	June	Sept	June	Sept
Congress St / Islington St	151		75		396		56		473		53	
State St / Middle St	139		33		218		94		281		42	
Islington St / Bartlett St	54		33		81		52		42		38	
South St / Marcy St	100		39		139		34		119		140	
Woodbury Ave / Rockingham Ave	27		32		N/A		N/A		N/A		N/A	
Lafayette Rd / Peverly Hill Rd / Elwyn Rd	10		12		1		17		22		30	
Middle St / Lafayette Rd / South St	27		14		41		19		N/A		N/A	
South St / Junkins Ave / Brackett Ln	65		28		71		25		N/A		N/A	
Memorial Bridge	105		61		142		122		168		58	
Maplewood Ave / Dennett St	75		9		N/A		N/A		55		14	