

REGIONAL BICYCLE AND PEDESTRIAN PLAN

Prepared
under
EOTPW Contract # 0052455



Old Colony Planning Council, 70 School Street, Brockton, MA 02301
September, 2008

Regional Bicycle and Pedestrian Plan

September 2008



Old Colony Planning Council

70 School Street
Brockton, MA. 02301
(508) 583-1833
www.ocpcrpa.org



This report was prepared under Contract with the Massachusetts Highway Department and with the cooperation of the Executive Office of Transportation and Public Works, and the Federal Highway Administration under contract 0052455.

OLD COLONY METROPOLITAN PLANNING ORGANIZATION

James Harrington	Mayor, City of Brockton
Richard Quintal	Chairman, Board of Selectmen, Plymouth
Colleen Corona	Chairman, Board of Selectmen, Easton
Matthew Albanese	Board of Selectmen, West Bridgewater
James A. Aloisi, Jr.	Secretary, EOTPW
Luisa Paiewonsky	Commissioner, MassHighway
Reinald Ledoux, Jr.	Administrator, BAT
Jeanmarie Kent Joyce	President, OCPC

JOINT TRANSPORTATION COMMITTEE

JTC OFFICERS

JTC Chairman	Noreen O'Toole
JTC Vice Chairman	Sid Kashi

JTC DELEGATES AND ALTERNATES

ABINGTON - <i>Delegate</i>	Kenan Connell
ABINGTON - <i>Alternate</i>	Bruce Hughes
AVON	Ed Sarni
BRIDGEWATER- <i>Delegate</i>	David Matton
BRIDGEWATER - <i>Alternate</i>	Robert Wood
BROCKTON - <i>Delegate</i>	Michael Thoreson
BROCKTON - <i>Alternate</i>	Elaine Czaja
EAST BRIDGEWATER - <i>Delegate</i>	John Haines
EAST BRIDGEWATER - <i>Alternate</i>	Richard O'Flaherty
EASTON - <i>Delegate</i>	Wayne P. Southworth
EASTON - <i>Alternate</i>	Maurice Goulet
HALIFAX	Troy Garron
HANSON	Noreen O'Toole
KINGSTON	Paul Basler
PEMBROKE	Michael Valenti
PLYMOUTH	Sid Kashi
PLYMPTON	Jim Mulcahy
STOUGHTON	Carin Klipp
WEST BRIDGEWATER	Tom Green
WHITMAN - <i>Delegate</i>	Daniel Salvucci

AGENCY REPRESENTATION

EOTPW	Tom Cahir
EOTPW	Wendy Stern
EOTPW	Joanne Weinstock
MHD District 5	Bernard McCourt
MHD District 5	Pamela Haznar
MHD District 5	Tim Kochan
BAT	Reinald Ledoux, Jr
BAT	Kathy Riddell
DEP	Christine Kirby
EPA	Donald Cook
FHWA	Michael Chong
FHWA	Shundreka Givan
FHWA	Paul Maloney
FHWA	Edward Silva
FTA	William Gordon
FTA	Donna Laidley
Brockton Traffic Commission	Captain John Gomes

OCPC TRANSPORTATION STAFF

Charles Kilmer	Transportation Program Manager
Caleb Cornock	Transportation Intern
Jed Cornock	Transportation Planner
Raymond Guarino	Transportation Planner
William McNulty	Transportation Planner
Susan McGrath	GIS Coordinator
Karen Winger	Transportation Planner

Old Colony Planning Council

OCPC OFFICERS

President	Jeanmarie Kent Joyce
Secretary	Lee Hartmann
Treasurer	Robert Moran

COMMUNITY

ABINGTON
AVON
BRIDGEWATER
BROCKTON
EAST BRIDGEWATER
EASTON
HALIFAX
HANSON
KINGSTON
PEMBROKE
PLYMOUTH
PLYMPTON
STOUGHTON
WEST BRIDGEWATER
WHITMAN
DELEGATE-AT-LARGE

DELEGATE

A. Stanley Littlefield
Frank Staffier
Anthony P. Anacki
Robert G. Moran, Jr.
Richard O'Flaherty
Jeanmarie Kent Joyce
John G. Mather
Robert Overholtzer
Paul Basler
Gerard Dempsey
Lee Hartmann
John Rantuccio
Joseph Landolfi
Eldon F. Moreira
Fred Gilmetti
Matthew Striggles

ALTERNATE

Robert Wing
Charles Marinelli

Preston Huckabee

Steve Donahue
Troy E. Garron
Phillip Lindquist

Brian Van Riper
Valerie Massard
James Mulcahy
Robert E. Kuver
Nancy Bresciani
Daniel Salvucci

OCPC STAFF

Pasquale Ciaramella	Executive Director
Lila Burgess	Ombudsman Program Director
Caleb Cornock	Transportation Intern
Jed Cornock	Transportation Planner
Hazel Gauley	Assistant Ombudsman Director
Elise Gifford	Transportation Intern
Raymond Guarino	Transportation Planner
Patrick Hamilton	AAA Administrator
Bruce G. Hughes	Economic Development/ Community Planner
Charles Kilmer	Transportation Program Manager
Jane E. Linhares	Grants Monitor/ Secretary
Janet McGinty	Fiscal Officer
Susan McGrath	GIS Coordinator
William McNulty	Transportation Planner
Anne Nicholas	Ombudsman Program Assistant
Norman Sorgman	Assistant Ombudsman Director
Jacqueline Surette	Fiscal Consultant
James R. Watson	Comprehensive Planning Supervisor
Karen Winger	Transportation Planner

Acknowledgements

The Old Colony Transportation Staff would like to thank the Old Colony Metropolitan Planning Organization (MPO), the Federal Highway Administration (FHWA), the Executive Office of Transportation and Public Works (EOTPW), the Federal Transit Administration (FTA) and the Massachusetts Highway Department (MassHighway), for providing the funding and support for this important transportation planning activity.

This planning level study was prepared by the following members of the Old Colony Planning Council staff under the direction of Pat Ciaramella, Executive Director, and the supervision of Charles Kilmer, Transportation Program Manager.

Project Manager

William McNulty, Transportation Planner
wmcnulty@ocpcrpa.org

Data Collection and Analysis

Caleb Cornock, Transportation Planning Intern

Jed Cornock, Transportation Planner
jcornock@ocpcrpa.org

Ray Guarino, Transportation Planner
rguarino@ocpcrpa.org

Bruce Hughes, Economic Development / Community Planner
bhughes@ocpcrpa.org

Karen Winger, Transportation Planner
kwinger@ocpcrpa.org

Mapping and Graphics

Susan McGrath, GIS Coordinator
smcgrath@ocpcrpa.org

Regional Bicycle and Pedestrian Transportation Plan

Table of Contents

<u>Section</u>		<u>Page</u>
1.	Executive Summary	1
2.	Introduction	3
	<i>Objective</i>	
	<i>Benefits of Bicycling and Walking</i>	
	<i>Policy Framework</i>	
	<i>Plan Development and Public Participation</i>	
3.	Existing Conditions	7
	<i>Sidewalks</i>	
	<i>Existing Walking Paths and Trails</i>	
	<i>Signalized Intersections</i>	
	<i>Intermodal Connections</i>	
	<i>Long Distance Routes</i>	
	<i>Recreational Bicycle Routes</i>	
	<i>Bicycle and Pedestrian Crash History</i>	
4.	Goals for Improving Bicycle and Pedestrian Infrastructure	19
	<i>Reduce Pedestrian Crashes and Injuries at Intersections</i>	
	<i>Reduce Non-Intersection Related Pedestrian Crashes and Injuries</i>	
	<i>Increase Mobility and Access for All Users</i>	
	<i>Reduce Bicycle Crashes and Injuries</i>	
	<i>Improve Navigation for Bicyclists</i>	
	<i>Increase Intermodal Access and Mobility</i>	
	<i>Employ Congestion Management Strategies</i>	
	<i>Improve Public Health by Improving Off-Road Bicycling and Walking Opportunities</i>	
	<i>Increase Mobility and Access within Community Centers, Downtown Areas, and Business Districts</i>	
	<i>Enhance Planning Operations and Infrastructure Maintenance</i>	
	<i>Improve Behavior of Bicyclists, Pedestrians, and Drivers</i>	
5.	Projects Current Planned or Under Construction	25
6.	Other Priority Projects Identified	29
7.	Financing	31
<i>Appendix A</i>	<i>Pedestrian and Bicycle Amenities in Existing Traffic Signal Systems</i>	
<i>Map A2-1</i>	<i>Bicycle Accommodations at Traffic Signal Locations</i>	
<i>Map A2-2</i>	<i>Pedestrian Amenities at Traffic Signal Locations</i>	
<i>Map A2-3</i>	<i>Handicapped Pedestrian Accessibility at Traffic Signal Locations</i>	
<i>Map A3-1</i>	<i>Safe Routes To School Program Eligible Schools (K-8)</i>	

This Page Is Purposely Left Blank

1. EXECUTIVE SUMMARY

Bicycling and walking are important components of a well-rounded multimodal transportation system. Many daily trips include walking, such as walking from the bus stop to a workplace, or walking from a parking lot to a shopping area or restaurant.

Bicycling is becoming an increasingly popular transportation mode choice, with rising energy costs and an increased public interest in environmental concerns.

This Regional Bicycle and Pedestrian Transportation Plan addresses cycling and walking within the Region by assessing current conditions and infrastructure, and addressing the needs of the Region for a further enhanced bicycle and pedestrian infrastructure throughout the transportation network.

This Plan outlines goals aimed at improving bicycle and pedestrian transportation, and strategies for achieving these goals. Planned projects and projects currently under construction that address bicycle and pedestrian infrastructure are listed in this Plan. Furthermore, the Plan lists specific bicycle and pedestrian projects and goals identified by the communities and the public through the public participation process.

This Page Is Purposely Left Blank

2. INTRODUCTION

Objective

Through Task 3300 – Regional Bicycle and Pedestrian Plan of the FFY 2008 Unified Planning Work Program, Old Colony Planning Council has developed this Regional Bicycle and Pedestrian Plan, which supports the ongoing efforts by local jurisdictions, regional, and state agencies in implementing multimodal urban and suburban mobility and pedestrian activities and facilities; and raises awareness of pedestrian movement and bicycling within the region.

This Regional Bicycle and Pedestrian Plan has been developed and submitted to the Joint Transportation Committee, local officials, the Executive Office of Transportation and Public Works (EOTPW), MassHighway, Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the general public for review and comments, and the Old Colony Metropolitan Planning Organization for endorsement. This plan is consistent with regional growth policies, public investment decisions, the amended Clean Air Act, Americans with Disabilities Act, and state air quality regulations. As requested by the United States Department of Transportation, this plan includes emphasis on safety and congestion management.

The Plan identifies transportation issues, concerns, and problems that will require improvements, and outlines possible courses of action designed to facilitate these improvements.

Benefits of Bicycling and Walking

Support of bicycling and pedestrian infrastructure and initiatives is based in part on the qualities of these transportation modes that support a healthy and sustainable transportation network in the region, a goal of the Old Colony Regional Transportation Plan. Bicycling and walking supports the goals and policies of multiple planning disciplines and governmental roles, including Transportation, Public Health, Environmental, Community Development, and Energy Policy.

Congestion Management: Many of the daily generated vehicle trips on area roadways are short distance trips such as transporting children to school or activities, running errands, etc. While often the destinations of these trips are within reasonable walking or cycling distance, people choose their automobile due to a variety of factors. Some factors are difficult to mitigate, such as a fear of crime, or weather conditions. Some of the factors, such as traffic and infrastructure, can be mitigated with engineering and construction. If more people choose walking or cycling for shorter distance trips, fewer automobiles are added to the roadways, therefore relieving congestion on area streets.

Public Health: The dependence on automobiles for most of our trips has substantially decreased the amount of physical activity of the public and has contributed to a variety of

health issues. Physical inactivity not only affects people on personal levels, but its consequential public health issues such as obesity, high blood pressure, and diabetes have an enormous cost to society as well. Supporting bicycling and pedestrian infrastructure and initiatives can provide the public with more opportunity for physical activity, improving their health and productivity.

Environmental: Increased pollution is another negative health impact from increased reliance on motor vehicles. Air pollution from motor vehicles can contribute to asthma and other respiratory ailments on a local level. Vehicle exhaust also contributes to increased greenhouse gases on a global level. When more people walk or bike for their shorter trips (groceries, errands, going to school, etc) there is less demand on the automobile hence a decrease in pollution.

Community Development: Walking and cycling connect people to their neighbors and increases a sense of community. Recent increased interest in “smart growth” and mixed-use development has provided opportunity for new developments to be designed with infrastructure such as sidewalks, pathways, bicycle lockers, and landscape lighting. Such features increase the sense of community among residents and visitors by increasing neighborhood safety and providing enhanced non-motorized transportation access and mobility.

Energy Policy: Increasing worldwide demand for energy, particularly from fossil fuels, in recent years has resulted in increased costs for energy. A well-balanced, multimodal transportation network is a vital component of a responsible energy policy. A variety of transportation options, including well designed and maintained bicycle and pedestrian infrastructure, allows alternatives to personal motor vehicle use and manages energy consumption.

Policy Framework

This Regional Bicycle and Pedestrian Transportation Plan is designed for compatibility with several Regional and State policies and plans, including:

- Old Colony Regional Transportation Plan, 2007
- MassHighway Project Development and Design Guide, 2006
- 2007 Massachusetts Bicycle Transportation Plan
- Massachusetts Pedestrian Transportation Plan, 1998

Additionally, local master plans and policies from the fifteen member communities of the Old Colony Planning Council were also consulted in the development of this Plan.

Plan Development and Public Participation

The Regional Bicycle and Pedestrian Transportation Plan was produced under Task 3300 of the Old Colony Unified Planning Work program, under contract #0052455 with the Massachusetts Highway Department.

A steering committee was formed to provide input and guide development of the Plan. Along with OCPC Staff, the Committee consisted of State and Federal transportation planning officials, local government and administration representatives from the fifteen member communities of Old Colony Planning Council, and advocates for bicycling and walking.

The Committee met in March and August of 2008. Additionally, through the Plan development, OCPC Staff maintained continuous communications with individual stakeholders.

This Page Is Purposely Left Blank

3. EXISTING CONDITIONS

Sidewalks

Figure 1 illustrates the extent of the sidewalk network in the Old Colony Region. According to the Massachusetts Road Inventory File, the Old Colony region has over 390 miles of roadway with a sidewalk on at least one side of the street. Most of the main roadways in the region have a sidewalk on at least one side. However, there are many smaller roadways, particularly in more rural areas, where sidewalks are not present. In some cases a worn footpath exists along the side of the roadway, and in others pedestrians share the roadway with vehicles.

Existing Walking Paths and Trails

Several parks, nature areas, and recreation areas throughout the region feature walking and shared use paths. These areas include:

- Ames Nowell State Park, Abington
- Borderland State Park, Easton
- D.W. Field Park, Brockton and Avon
- Myles Standing State Forest, Plymouth

In addition to these major areas, several smaller parks and conservation areas exist in each of the towns, many providing pedestrian trails and paths.

Bridgewater State College has a network of paved footpaths connecting campus buildings, parking areas, and the Bridgewater MBTA Commuter Rail Station.

Signalized Intersections

Signalized intersections often present the best opportunity for bicyclists and pedestrians alike to cross a street as they provide ordered and predictable traffic control. Features such as crosswalks, pedestrian call buttons, pedestrian “walk” / “don’t walk” signals, pedestrian countdown signals, bicycle detection loops, and accessible controls for the vision and hearing impaired are some features that further facilitate bicycle and pedestrian movements at signalized intersections. Appendix A of this report contains a complete listing of traffic signals throughout the region, and summarizes the bicycle and pedestrian amenities, if any, included within the individual systems. Appendix B contains maps that graphically summarize this data on maps of the Region.

Intermodal Connections

There are twelve MBTA Commuter Rail Stations, two local Regional Transit Agency hubs (BAT Intermodal Centre in Downtown Brockton and PAL/GATRA Hub at Memorial Hall in Plymouth), and six Park-and-Ride (intra-city bus) stations within the Old Colony Region. Additionally, three Commuter Rail stations (South Weymouth, Holbrook/Randolph, and Middleborough/Lakeville) and two Park-and-Ride stations

This Page Is Purposely Left Blank

SIDEWALK NETWORK IN THE REGION

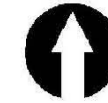
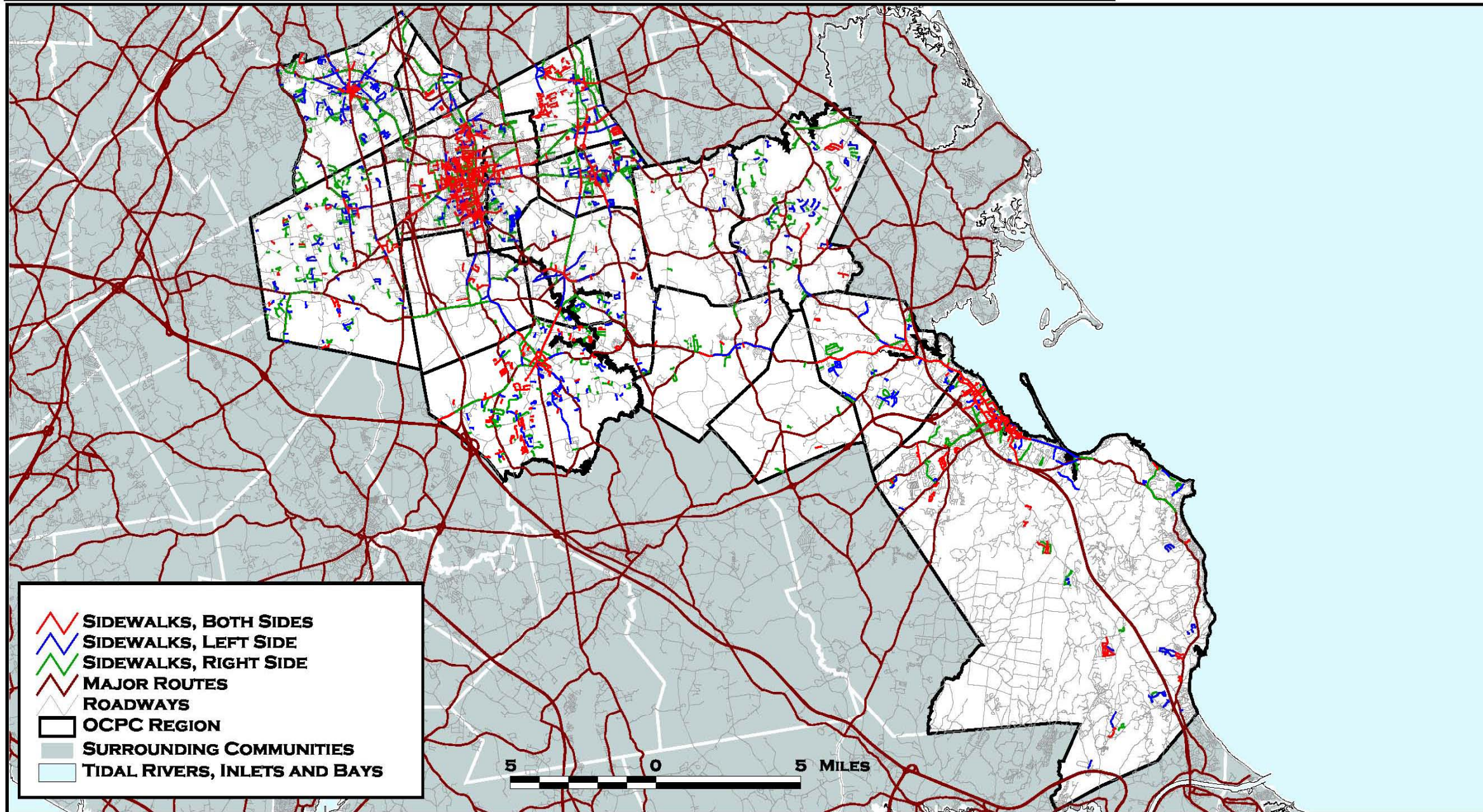


FIGURE 1



- SIDEWALKS, BOTH SIDES
- SIDEWALKS, LEFT SIDE
- SIDEWALKS, RIGHT SIDE
- MAJOR ROUTES
- ROADWAYS
- OCPC REGION
- SURROUNDING COMMUNITIES
- TIDAL RIVERS, INLETS AND BAYS

5 0 5 MILES



OLD COLONY PLANNING COUNCIL 70 SCHOOL STREET
GIS DATA SOURCES: MASSGIS, EOTPW, OCPC

BROCKTON, MA 02301

SEPTEMBER, 2008

This Page Is Purposely Left Blank

(Rockland, Bourne) that are located beyond the borders of the Region are also monitored in the Old Colony Congestion Management Process.

All of the MBTA Commuter Rail Stations are equipped with bike racks, as is the Brockton Area Transit Intermodal Centre. Additionally, most stations are accessible to pedestrians and the disabled, however ease of connections and distance from the main roadway vary from station to station.



Figure 2: Pedestrian walkway connection at Hanson MBTA Commuter Rail Station

Long Distance Routes

Claire Saltonstall Boston to Cape Cod Bikeway: The Claire Saltonstall Bikeway, also known as the Boston to Cape Cod Bikeway, is a 135-mile bikeway marked on signs and official maps as Bike Route 1. It starts on the Charles River Bikeway in Boston; and, travels along a network of off-road bike paths, back roads, and secondary highways to its terminus in Provincetown. Dual signs are provided along the route, one with a picture of a bicycle on a green background and the number “1” in green below the picture, and another rectangular sign with the words “Claire Saltonstall Bikeway” below. These signs were erected after the official legislative act in 1978 naming the bike route. Few of these signs, however, remain today. In order to follow the route, riders need a map detailing where the route follows.

Within the Old Colony Region, the Claire Saltonstall Boston to Cape Cod Bikeway travels through Avon, Brockton, East Bridgewater, Halifax, Plympton, Kingston, and Plymouth.

Bay Circuit Trail: The Bay Circuit Trail (BCT) is a two hundred mile long recreation trail connecting parks, open spaces, and waterways in eastern Massachusetts. First proposed in 1929 as an outer "emerald necklace," the route stretches from Plum Island in Newburyport on the North Shore to Kingston Bay, traversing 50 cities and towns. Approximately 150 miles of the trail have been completed. The BCT varies in surface type, from earthen hiking trails to paved shared-use trails.

In the Old Colony Region, the Bay Circuit Trail runs through Easton, West Bridgewater, Bridgewater, East Bridgewater, Hanson, Pembroke, and Kingston. Aside from a gap in Bridgewater and East Bridgewater, where a trail connection is proposed but not open, the trail creates a contiguous path from the western border of the region (the Easton/Sharon Town Line) to Kingston Bay.

Recreational Bicycle Routes

The Seaside Bike Trail in Plymouth is a 1.5 mile long facility that runs parallel to the Plymouth seashore between Hedge Road (just south of Cordage Park) and Nelson Street (just north of Downtown Plymouth) at the Nelson Street Recreation Area.



Figure 3: The Seaside Bike Trail, in Plymouth Massachusetts

The Myles Standish State Forest in Plymouth and DW Field Park in Brockton and Avon offer miles of paved bike paths. The Ames Nowell State Park in Abington offers mountain biking trails, while the Borderland State Park in Easton provides both paved bike paths and mountain bike trails.

Bicycle and Pedestrian Related Crash History

In terms of frequency and severity of injuries to users of the transportation system, bicyclists and pedestrians are particularly vulnerable. The extreme difference in speed and mass between motor vehicle traffic and non-motorized users results in a high likelihood that a pedestrian or bicyclist will suffer an injury in a crash. Table 1 summarizes bicycle and pedestrian crash data in the region from 2004 through 2006. The data clearly shows that a high percentage of bicycle and pedestrian crashes result in an injury.

Figure 5 shows the location of bicycle and pedestrian crashes for 2005 and 2006, the two most recent years for which location coordinates are available. Many of the crashes occurred in urban areas and around town centers, where bicycle and pedestrian trip generation is the greatest, as well as is exposure to motor vehicle traffic.

In collisions between pedestrians and vehicular traffic, the speed at which the vehicle is traveling when a pedestrian is struck has a major influence on the severity of injuries to the pedestrian and the chance that the pedestrian will die from injuries.

Studies by the United Kingdom's Department of Transport examining the effect of vehicle speed on force of impact and resulting injuries to the pedestrian have yielded the following conclusions:

- At 40 MPH, 85 percent of all persons hit by vehicles die, compared to 20 percent at 30 miles per hour, and 5 percent at 20 miles per hour.
- When speed increases from 30 mph to 35 mph, the force of impact on the pedestrian or bicyclist increases by a third

Figure 4
A pedestrian's chance of death if hit by a motor vehicle:

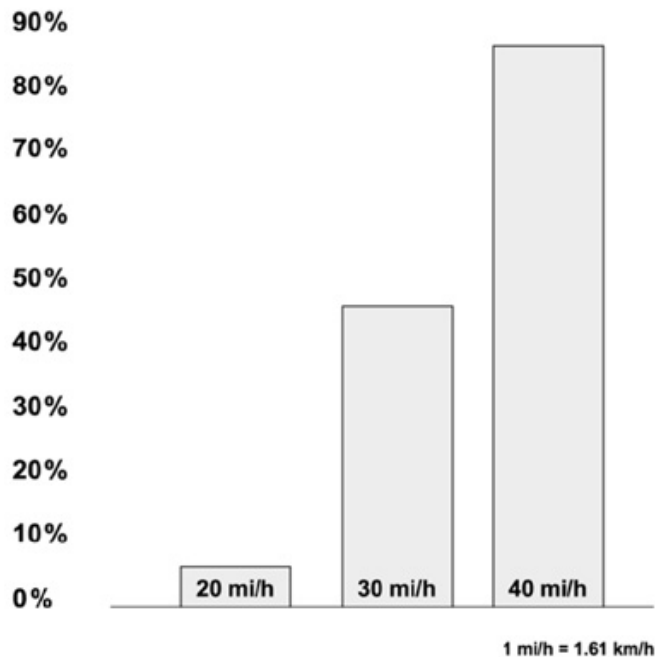


Figure 4: Chance of dying from injuries resulting from being struck by moving vehicle rapidly increases with speed of moving vehicle (Source: UK Dept. of Transport)

This Page Is Purposely Left Blank

Table 1: Bicycle and Pedestrian Related Crash History, 2004 - 2006

	Crashes Involving Cyclists					Crashes Involving Pedestrians				
	Total Crashes	Crashes With Injuries	% With Injuries	Fatal Crashes	% Fatal	Total Crashes	Crashes With Injuries	% With Injuries	Fatal Crashes	% Fatal
Abington	10	6	60%	1	10%	8	8	100%	0	0%
Avon	4	2	50%	0	0%	2	0	0%	1	50%
Bridgewater	4	2	50%	0	0%	19	4	21%	0	0%
Brockton	109	83	76%	0	0%	190	128	67%	3	2%
East Bridgewater	8	2	25%	0	0%	5	2	40%	1	20%
Easton	2	2	100%	0	0%	9	2	22%	0	0%
Halifax	3	3	100%	0	0%	3	1	33%	0	0%
Hanson	3	1	33%	0	0%	3	2	67%	0	0%
Kingston	2	0	0%	0	0%	7	2	29%	1	14%
Pembroke	8	6	75%	0	0%	7	6	86%	0	0%
Plymouth	12	0	0%	0	0%	28	5	18%	0	0%
Plympton	0	0	0%	0	0%	1	1	100%	0	0%
Stoughton	21	12	57%	0	0%	28	21	75%	1	4%
West Bridgewater	4	2	50%	0	0%	3	2	67%	2	67%
Whitman	8	4	50%	0	0%	13	10	77%	1	8%

This Page Is Purposely Left Blank

CRASHES INVOLVING BICYCLES AND/OR PEDESTRIANS

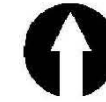
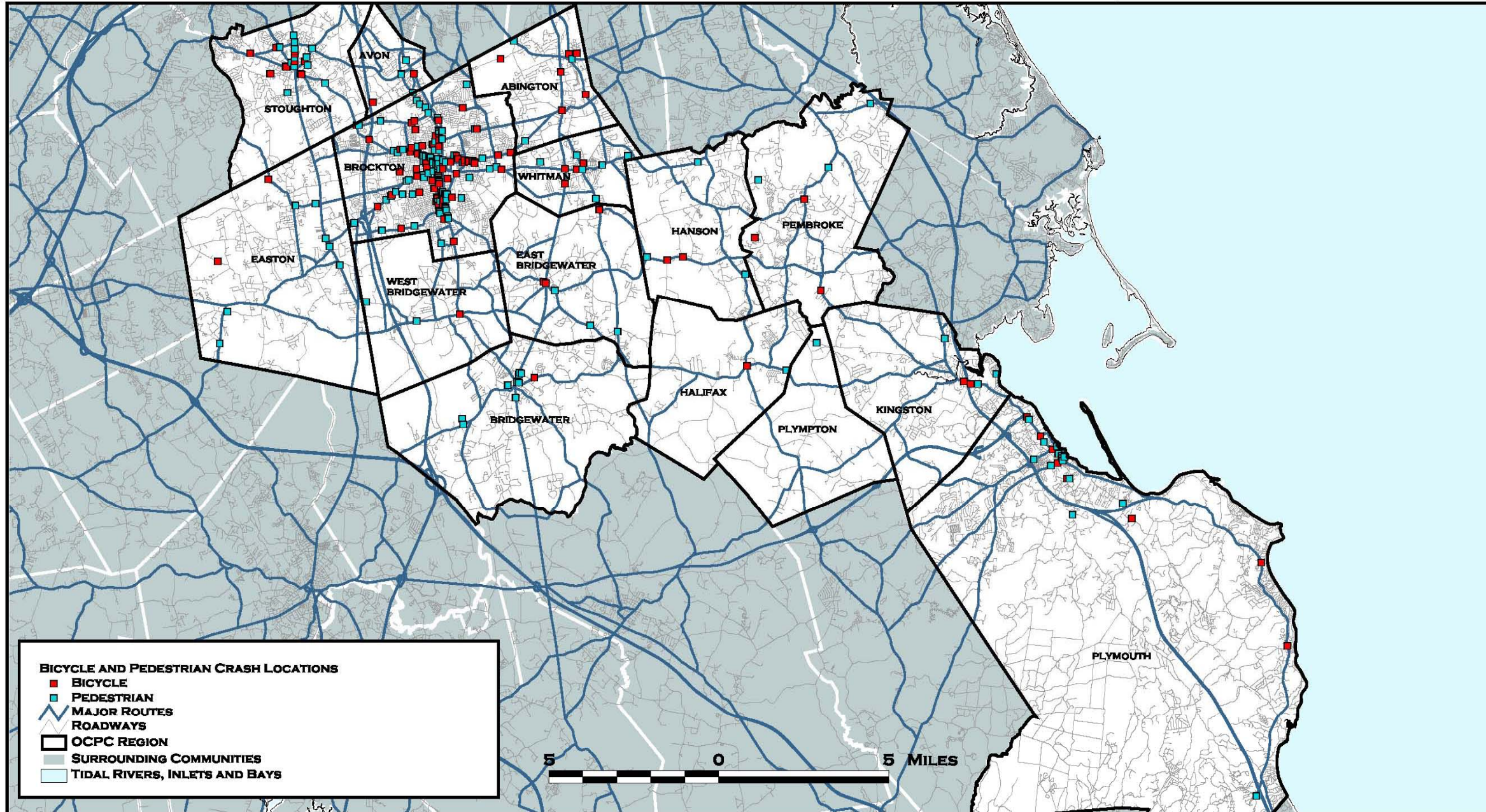


FIGURE 5



OLD COLONY PLANNING COUNCIL
GIS DATA SOURCES: MASSGIS, EOTPW, OCPC

70 SCHOOL STREET

BROCKTON, MA 02301

SEPTEMBER, 2008

This Page Is Purposely Left Blank

4. GOALS FOR IMPROVING BICYCLE AND PEDESTRIAN TRANSPORTATION

Reduce Pedestrian Crashes and Injuries at Intersections

Reducing pedestrian crashes and related injuries at intersections is an essential component to supporting pedestrian mobility throughout the transportation network. The assurance that one is reasonably safe while walking is critical to public confidence and the inclination to choose walking as its mode choice for short distance trips.

The following strategies are recommended for achieving a reduction in pedestrian crashes and injuries at intersections:

- Support upgrading all traffic signals with pedestrian call buttons, crosswalks, curb ramps, and pedestrian phases
- Support No Turn On Red restrictions at locations where pedestrian criteria prescribed in the MUTCD are met
- Improve sight lines and visibility for pedestrians and motorists by clearing vegetation and relocating roadside objects that may be obstructing views
- Provide sufficient lighting at intersections to increase visibility of pedestrians in darkness

Reduce Non-Intersection Related Pedestrian Crashes and Injuries

Mainline and mid-block roadway sections present safety challenges for pedestrians that often require their own unique strategies for mitigation. Impaired sight lines from vegetation and other roadside fixed objects, changes in topography and slope, lighting and glare conditions, lack of sidewalks, and crossing width are just some factors affecting the level of protection for pedestrians.

The following strategies are recommended for achieving a reduction in pedestrian crashes and injuries on mainline and mid-block roadway sections:

- Reduce pedestrian crashes and fatalities by addressing the unique safety needs of all demographic groups, including children, the elderly, and the physically disabled
- Consider measures to address excess vehicle speeds such as strict speed enforcement and traffic calming
- Improve sight distances and visibility between motorists and pedestrians at intersections, crosswalks, and other major crossing points
- Support use of raised medians / refuge islands on wider streets where pedestrian crossing is difficult
- Provide enhancements (retroreflective signage and street paint, overhead lighting, etc) at crosswalks
- Support use of raised crosswalks at significant crossings where travel speeds are an issue

Increase Mobility and Access for All Users

All potential users of the transportation system must be considered when planning new facilities and improvements to existing facilities. Older persons, the physically challenged, and children all present unique needs that need to be accommodated with appropriate infrastructure in the transportation network where they are applicable.

The following strategies are recommended for increasing access and mobility for all potential pedestrians and bicyclists:

- Ensure ADA compliance and that newly constructed and/or altered sidewalks and trails are accessible and usable by people with disabilities
- Ensure sidewalks, especially those in downtown areas and near transit stops, have properly designed and maintained curb ramps for persons with mobility impairments, as well as adults pushing strollers
- Support upgrading of traffic signals at more-complex intersections where visually impaired may be confused by varying traffic sounds with Accessible Pedestrian Signals (APS) technology
- Include all potential users, including people with disabilities, in the public participation and planning processes

Reduce Bicycle Crashes and Injuries

Reducing crashes involving bicyclists and associated injuries is an essential component to supporting mobility for bicyclists throughout the transportation network. The assurance that one is reasonable safe while riding a bicycle is critical to public confidence and its inclination to choose cycling as a viable mode of transportation.

The following strategies are recommended for achieving a reduction in crashes involving bicyclists and a reduction in the frequency and severity of injuries:

- Encourage laterally-slatted storm grate covers to be oriented perpendicularly to curbs, in conformance with the MassHighway *Project Development and Design Guide (2006)*. Those oriented parallel to the curb present safety hazard to bicyclists
- Support the improvement of signal timing and detection at signalized intersections, including providing adequate clearance time for bicycles and bicycle detection sensors
- Improve visibility of/for bicyclists at intersections by clearing roadside vegetation and providing sufficient lighting
- Provide striped bicycle lanes or paved shoulders for safer travel for bicyclists
- Provide contra-flow bike lanes on some one-way streets in downtown areas of Brockton and Plymouth
- Implement traffic calming techniques and strict speed enforcement in areas where conflict between bicyclists and excessively fast moving motorized traffic is occurring

Improve Navigation for Bicyclists

Clear and concise signage and delineation of bike paths and routes are important in fostering bicycle use as a mode of transportation.

The following strategies are recommended for improving navigation for bicyclists:

- Enhance existing on-road bike routes with clear signage
- Reroute portions of Claire Saltonstall Bikeway (Boston-Cape Cod Bikeway) to lesser traveled, easier to use roadways (i.e. - away from Route 80 and State Road in Plymouth) in conjunction with affected municipalities and MassHighway.

Increasing Intermodal Access and Mobility

In many cases, the distance one must travel to their ultimate destination is greater than that which may be reasonable for walking or cycling. Well designed connections between transit hubs and stations to an extensive sidewalk and bike route network facilitate longer distance travel without the use of a personal motor vehicle.

The following strategies are recommended for improving intermodal access and mobility:

- Promote bicycle and pedestrian access to transit, bicycle parking at transit, and bicycle conveyance aboard commuter rail.
- Support transit resources incorporating measures such as bike racks, bike storage lockers, etc at stations.
- In communities with Commuter Rail stations, provide signed bike routes from various points throughout the community and the station
- Provide walkway connections from transit stations to local neighborhoods and existing sidewalk network
- Promote bicycle storage at transit nodes such as the Wal*Mart store in Abington and Colony Place in Plymouth
- Enhance visibility and potentially traffic calming at crossing areas on Route 28, Commercial Street, and Plain Street in the vicinity of the Brockton (Montello, Brockton, and Campello) Commuter Rail Stations

Employ Congestion Management Strategies

Along with improving access and safety for bicyclists and pedestrians, enhancing the Congestion Management Process with strategies to increase walking and cycling as a method for reducing congestion is a goal of this Plan.

The following strategies are recommended for employing bicycle and pedestrian planning as a congestion management tool:

- Enlist the services, as appropriate, of the EOTPW-supported MassRIDES Program.
- Develop designated bike routes from points throughout communities to Commuter Rail stations

- Organized “Bike to Work” Days for major employers, including use of police details at major traffic points, where appropriate. A “Walk to Work” program could also be incorporated into it
- Implement a bicycle counting program to determine bicycle traffic
- Incorporate bicycle parking utilization into Congestion Management Process
- Encourage employers to allow flexibility and benefits for workers who bike/walk to work

Improve Public Health by Improving Off-Road Bicycling and Walking Opportunities

According to the Centers for Disease Control and Prevention (CDC), the prevalence of obesity continues to be a health concern for adults, children, and adolescents in the United States. In a 2006 survey, 33.3% of men, 35.3% of women, and 16.3% of children in the United States were classified as clinically obese. Among health complications caused by obesity are the increased risk of heart disease, diabetes, cancer, high blood pressure, and stroke.

Aside from obesity and its associated health risks, a reliance on motorized transportation can influence other health factors as well. For example, air pollution from engine exhaust can influence asthma and other respiratory diseases. According to a medical study printed in the Journal of the American Medical Association (JAMA) on February 21, 2001, asthma related events in children decreased over 40 percent during the 16 day period of the 1996 Olympic Games in Atlanta, when strict transportation management measures were in effect. These measures included a ban on private single-occupancy vehicle travel in the downtown sector during the 16-day period, as well as altered delivery schedules for commerce. This study showed a direct link between traffic congestion, and respiratory events in children.

Assuring safe and convenient bicycle and pedestrian access on the transportation network provides an opportunity to improve public health with a more active population and fewer pollutants in the air as a result of fewer short distance vehicular trips.

The following strategies are recommended for increasing access to recreation and improving public health:

- Support efforts to work with utility companies to allow non-motorized access to utility corridors
- Develop Greenways along priority river corridors, such as the Wampanoag Canoe Passage (From Commonwealth Connections)
- Link open spaces and parks for conservation and recreation

Increase Mobility and Access (“Walkability”) Of Community Centers, Downtown Areas, and Business Districts

A vibrant and thriving downtown or village center is a desirable feature for any community. The ability of people to safely and easily walk from one store to another, or from the town hall to the library, is an essential component to maintaining such a

downtown. Similarly, when traffic volumes and speeds are high through the downtown or community center, the traffic creates a barrier between land uses and inhibits economic vitality.

The following strategies are recommended for increasing mobility and access for pedestrians and bicyclists within town centers and business districts:

- Use of kiosks with maps and local information in Plymouth waterfront area and Downtown Brockton
- Use of colored solid painted crosswalks, textured crosswalks, or raised crosswalks in pedestrian activity centers to alert drivers to changing conditions
- Ensure that circulation and site plans minimize barriers, and that they create or improve access between uses for pedestrians, people with disabilities, and bicyclists.
- Support and encourage Transit Oriented Developments (TODs), Smart Growth, Chapter 40R Developments, and other mixed use development
- Continue to assess bicycle and pedestrian needs with all project reviews in the MEPA process
- Encourage developers to incorporate bicycle and pedestrian friendly design into developments
- Encourage communities to enforce local zoning requirements for off-road path connectivity between cul-de-sac developments, as well as commercial developments
- Encourage site plans that include designs that provide designated walkways between parking areas and property uses to reduce exposure of pedestrians in parking lots

Enhance Planning Operations and Infrastructure Maintenance

Incorporating bicycle and pedestrian planning into everyday planning and infrastructure maintenance operations ensures a continuing and constant focus on addressing the needs of pedestrians and bicyclists.

The following strategies are recommended for enhancing planning operations and infrastructure maintenance:

- Encourage improvements to the Roadway Inventory File (developed by EOTPW) so as to contain data on bicycle lanes, identified bicycle routes, and locations of on-street parking
- Develop a centralized, web-based bicycle and pedestrian hazard reporting system, where public agencies and citizens alike can report hazards/obstacles (potholes, up-heaving from tree roots, poor pavement, etc) to safe and convenient non-motorized use
- Encourage communities constructing transportation projects with Chapter 90 (exempt from EOTPW requirements for design) to incorporate design that safely accommodates bicyclists and pedestrians, in accordance with current AASHTO and MassHighway guidance.

- Support legislation that requires utility companies to report sale of property to the Executive Office of Transportation and Public Works so local governments and public agencies have right of first refusal to purchase property. Railroad companies are currently required to do so by such a law, but not utility companies, even though this property could be just as useful for bicycle and pedestrian use

Improve Behavior of Bicyclists, Pedestrians, and Drivers

Initiatives to improve behavior of bicyclists, pedestrians, and drivers alike are an important component to improving bicycle and pedestrian mobility and safety. While infrastructure improvements and planning initiatives are able to improve safety to a certain extent, many crashes can still be attributed to poor decision making and reckless behavior of all users on the transportation network.

The following strategies are recommended for improving behavior of bicyclists, pedestrians, and drivers:

- Support improved pedestrian and motorist safety awareness and behavior through educational initiatives, including but not limited to Safe Routes To School
- Support traffic enforcement campaigns to reduce issues such as red-light running and crosswalk violations

5. PROJECTS CURRENTLY PLANNED OR UNDER CONSTRUCTION

There are several projects either currently under construction or identified on the Old Colony Transportation Improvement Program (TIP) that include improvements for bicycle and pedestrian transportation. The Massachusetts Highway Department's Project Development and Design Guide mandates that all transportation projects need to equally consider all users, including pedestrians and bicyclists, in all phases of a construction project so that even the most vulnerable users (children and elderly) can feel and be safe within the public right of way.

The following projects are those either currently under construction or planned and identified in the Old Colony TIP:

Avon

- Resurfacing and related work on Harrison Boulevard, between Route 24 and Route 28. Work includes upgrading existing sidewalks at the Route 28 and Harrison Boulevard intersection. This project was recently completed.

Bridgewater

- Signalization and improvements on Bedford Street (Route 18/28) at Winter Street (PROJIS #603568). The newly designed intersection will include crosswalks, ADA ramps, push-button activated pedestrian controls, and bike lanes on Winter Street and is currently under construction.
- Signalization and improvements at Route 18 and High Street (PROJIS #603660). This project is in the preliminary design phase, and specifics regarding bicycle and pedestrian infrastructure or not known at this time.
- Reconstruction of North Street from Route 104 to Village Gate Drive (PROJIS #604958). This project will include construction of a new sidewalk on the east side of the roadway.

Brockton

- Reconstruction (Inclusion of Sidewalks) of Winter Street (PROJIS #601347), currently under construction. This project includes the following bicycle and pedestrian amenities:
 - New sidewalks
 - ADA Ramps at intersections
 - Signalization with pedestrian phase at Winter Street and Howard Street
- Signalization and intersection improvements at Route 27, Belair Street, and Moraine Street (PROJIS #604595), currently under construction. This project includes the following bicycle and pedestrian amenities:
 - New sidewalks
 - ADA Ramps
 - Push-button activated pedestrian control phase

- Traffic signal upgrades at Belmont Street (Route 123) and the V.A. Hospital (PROJIS #602606). This project is in the preliminary design phase, and is currently scheduled in the 2010 element of the Old Colony TIP. Specifics to bicycle and pedestrian infrastructure are not known at this time; however, new ADA/AAB ramps and pedestrian controls are expected.
- Reconstruction of Route 27 at West Street and Westgate Mall Drive (PROJIS #604431). This project is scheduled in the 2009 element of the Old Colony TIP.
- Reconstruction of Pleasant Street (Route 27) in Brockton (PROJIS #600365). This project includes the following bicycle and pedestrian amenities:
 - New 7-foot cement concrete sidewalks on each side.
 - ADA/AAB Ramps at each intersection
 - New crosswalks at each intersection
 - Signalization of Pleasant Street and Ash Street intersection
 - Signalization of Pleasant Street and Augusta Avenue / Belmont Avenue intersection
- Reconstruction of Court Street from Main Street to North Cary Street (PROJIS #601342). This project is in the preliminary design phase. The project is expected to include new sidewalks and new ADA/AAB ramps at intersections.
- Reconstruction of Forest Avenue, from Warren Avenue to Belmont Street. (PROJIS #601344). This reconstruction project includes new sidewalks.
- Reconstruction of Centre Street (Route 123) from Montello Street to North Cary Street (PROJIS #601346). This project includes new curbs and sidewalks.

East Bridgewater

- Intersection reconstruction and signalization of Route 14 and Route 27. This project was recently completed.

Easton

- Reconstruction (Inclusion of Sidewalks) of Route 123 from Route 106 to Norton Town Line (PROJIS #601332). This project includes paved shoulders to accommodate bicyclists, and new sidewalks for pedestrians.
- Reconstruction and improvements at Route 106 and Route 123, Five Corners (PROJIS #604658). Specifics of bicycle and pedestrian infrastructure are not known at this time. The project is at 25 percent design, and programmed in the FFY 2011 element of the Old Colony TIP.
- Reconstruction of Bay Road (PROJIS #601335). This project is in the preliminary design phases, and specifics of bicycle and pedestrian infrastructure are not known at this time.
- Reconstruction of Massapoag Avenue (PROJIS #601336). This project is in the preliminary design phases, and specifics of bicycle and pedestrian infrastructure are not known at this time.
- Reconstruction of Depot Street, from Route 138 to Turnpike Street (PROJIS #601337). This project is in the preliminary design phases, and specifics of bicycle and pedestrian infrastructure are not known at this time.

- Intersection improvements at Route 138 and Turnpike Street (PROJIS #604098). This project is in the preliminary design phases, and specifics of bicycle and pedestrian infrastructure are not known at this time.

Halifax

- Reconstruction of Holmes Street (Route 36) (PROJIS #601405). This project includes new bituminous concrete sidewalks, and fully accessible bituminous concrete ramps, and is currently under construction.

Kingston

- Reconstruction of Pembroke Street (Route 27) (PROJIS #600413). This project includes new sidewalks, and is currently under construction.
- Reconstruction of Route 106 (Main Street and Wapping Road) (PROJIS #601164). This project includes new sidewalks and fully accessible ramps, and is in the preliminary design phase.
-

Pembroke

- Design and Construct Herring Brook Valley Boardwalk (PROJIS #604815). This project is at the 25 percent design stage, and is programmed in the FFY 2012 element of the Old Colony TIP.
- Rehabilitation/Reconstruction of Center Street (Route 36) (PROJIS #600380). This project is in the preliminary design phases, and specifics of bicycle and pedestrian infrastructure are not known at this time.
- Reconstruction of Route 14 from the Hanson Town Line to Washington Street (Route 53) (PROJIS #604957). The project includes new sidewalk construction, and is at the 25 percent design stage.

Plymouth

- Installation of bike racks at priority locations throughout Town (Equipment cost reimbursed with CMAQ funding; shipping and installation costs funded by Town) – Pilot Program (Subject To Availability of Funds).
- Construction of new sidewalk from Bourne Road Connector Road (to be constructed as part of “River Run” project) to the South Elementary School in Plymouth.
- Reconstruction of Samoset Street from the intersection of Westerly Road / Route 3 Ramps to just west of Water Street. The project includes the reconstruction of the existing sidewalks and includes signal installation with pedestrian amenities at several intersections (PROJIS 600926).

- Reconstruction of Taylor Avenue, from White Horse Road to Manomet Point Road (PROJIS #605038). Pedestrian and bicycle mobility along Taylor Avenue will be improved with this project. The project is at the 25 percent design stage, and is programmed in the FFY 2012 element of the Old Colony TIP.
- Reconstruction of Samoset Street (Route 44) from Route 3 to Water Street (PROJIS #600426). This roadway reconstruction will include reconstruction of existing sidewalks, and new signals at Samoset Street and Standish Avenue. The project is in the preliminary design phase.
- Intersection improvements at Route 3A and Manomet Point Road (PROJIS #603468). The project is in the preliminary design phase, and will include pedestrian controls, crosswalks, and accessible ramps.

Plympton

- Reconstruction of Route 58 from Carver Town Line to Halifax Town Line (PROJIS #602237). The project is currently under construction, and includes new sidewalks, as well as a new traffic signal in the village center.

West Bridgewater

- Reconstruction of Manley Street (PROJIS #601854). This project includes new sidewalks, and is currently under construction.
- Intersection reconstruction of Route 106 and Route 28 (PROJIS #603457). This project is in the preliminary design phases, and specifics of bicycle and pedestrian infrastructure are not known at this time. It is programmed in the FFY 2011 element of the Old Colony TIP.
- Reconstruction of West Center Street (Route 106) from Route 28 to Easton Town Line (PROJIS #603456). This project is in the preliminary design phases, and specifics of bicycle and pedestrian infrastructure are not known at this time.

6. OTHER PRIORITY PROJECTS IDENTIFIED

In addition to those projects being constructed or otherwise previously planned and initiated on the Old Colony TIP, several projects have been identified as priorities for the communities of the OCPC Region. These projects have been collected from a variety of sources, including other documents and through public participation input.

East Bridgewater

- Sidewalk Improvements on Route 18.

Easton

- Connectivity of Priority Preservation Areas.

Halifax

- Extend sidewalks on Route 106, Route 58, and Route 36 in Halifax (Identified as priority by Town).
- Create a sidewalk loop in Halifax, Hanson, and Pembroke (Routes 36, 27, 58, and 106) that connect surrounding neighborhoods to business district at Route 106 and 58 (Identified as priority by Town).
- Create a sidewalk loop between Thompson Street (Route 105), roadways in Middleborough, South Street and Hayward Street in Halifax, and Route 106 (Identified as priority by Town).

Kingston

- Pedestrian safety improvements on Landing Road.

Plymouth

- Complete sidewalk network between Downtown Plymouth (waterfront area) and Colony Place (new sidewalk construction between Federal Furnace Road area and Colony Place) (Identified as priority by Town).
- Enhance sidewalk and bicycle path network in Cedarville section of Plymouth, particularly between residential areas and the Elmer Raymond Playground.

West Bridgewater

- Construction of a Walkway/Bike Path around West Bridgewater State Forest.
- Create sidewalk connectivity from South Street neighborhood to West Bridgewater Town Center.

Regional projects

- Completion of Bay Circuit Trail through Old Colony Region.
- Continue to support Safe Routes To School initiatives at K-8 schools within the Region.

This Page Is Purposely Left Blank

7. FINANCING

Federal Funding Sources

Surface Transportation Program (STP)

This program may be used for construction of bicycle and pedestrian facilities or for safety-related non-construction activities such as maps and brochures. Activities must be primarily transportation oriented (as opposed to recreation oriented) and consistent with the plans of the Region and the State.

Transportation Enhancements Program

Funds are available for the provision of facilities for bicyclists and pedestrians and the reservation of abandoned railway corridors including the use thereof for pedestrian and bicycle trails. Projects should be primarily transportation oriented and be part of a route that connects urban employment centers and other major trip generators. These projects must be listed in the Transportation Improvement Program (TIP), and be consistent with the goals and objectives of the Regional Transportation Plan and the state in order to be eligible for this type of funding. It should be noted, however, that compliance with the above-mentioned conditions does not guarantee that a project will be funded. Projects listed in the TIP compete for funding against all other projects, and all projects are evaluated on a standardized criteria evaluation program.

Highway Safety Improvement Program (HSIP)

This program makes available funds for projects that improve the safety of bicyclists and pedestrians.

Congestion Mitigation and Air Quality (CMAQ) Improvement Program

This program is available in Massachusetts since the State has not yet attained the clean air standards established under the Clean Air Act. Funds from this program may be used for activities aimed at increasing the use of non-motorized modes of transportation including bicycle and pedestrian facilities. Activities must be transportation-oriented and consistent with the plans of the Region and State. Activities seeking funding must also demonstrate a projected reduction in airborne pollutants (CO, NO_x, and VOCs) directly related to the proposed activity.

Safe Routes to School

These funds may be used for infrastructure projects on non-infrastructure projects that enable and encourage children to walk and bike to elementary and middle schools.

Scenic Byways Program

Funds from this program may be used for bicycle and pedestrian facilities directly related to the program's purpose of supporting and developing state and national scenic byways.

Other Funding Sources

Smart Growth Zoning and Housing Production (MGL Chapter 40R)

Chapter 40R of the General Laws of Massachusetts, Smart Growth Zoning and Housing Production, provides economic incentive for communities to support "smart growth" development. Smart Growth is a principle of land development that emphasizes mixing land uses, increases the availability of affordable housing by creating a range of housing opportunities in neighborhoods, takes advantage of compact design, fosters distinctive and attractive communities, preserves open space, farmland, natural beauty and critical environmental areas, strengthens existing communities, provides a variety of transportation choices, makes development decisions predictable, fair and cost effective and encourages community and stakeholder collaboration in development decisions.

Smart growth developments are an excellent method for communities to increase cycling and walking and reduce vehicular trips as they often provide short routes between housing and other land uses, such as retail and food service.

Community Preservation Act

The Massachusetts Community Preservation Act provides a tool that communities can use to acquire and preserve open space. This open space can then be used for walking and biking trails, as well as other activities

Public Works for Economic Development (PWED)

The Public Works Economic Development (PWED) Program was created by the Legislature to assist municipalities in funding transportation infrastructure for the purpose of stimulating economic development. The PWED regulations (7.01 CMR 5.00 et seq.) are designed to provide eligible municipalities with maximum flexibility and discretion as it relates to project development and implementation (701 CMR 5.01), but vest in the Secretary of Transportation the responsibility for evaluating and selecting eligible projects that will facilitate economic growth consistent with applicable state policies (701 CMR 5.10). These Guidelines derive from the above cited regulations, and serve as a Program 'instruction manual'.

Developer Mitigation

Seeking transportation mitigation from would-be developers is an avenue for improving bicycle and pedestrian infrastructure, particularly in proximity to the development.

Local Funds

The construction of bicycle and pedestrian infrastructure is an applicable use of Chapter 90 funding from the Commonwealth. Communities may use other local revenue sources as well to construct and maintain bicycle and pedestrian infrastructure.

Appendix A: Pedestrian and Bicycle Amenities in Existing Traffic Signal Systems

TOWN	MAJOR STREET	CROSS STREET	TYPE	CROSS- WALKS	PEDESTRIAN		ADA		BIKE LOOPS
					CALL BUTTONS	COUNT- DOWN	Truncated Domes	Audible	
Abington	Bedford Street (Route 18)	Brockton Avenue (Route 123)	Full	Yes	Yes	No	No	No	No
Abington	Bedford Street (Route 18)	Lincoln Boulevard	Full	Yes	Yes	No	No	No	Yes
Abington	Bedford Street (Route 18)	Lowe's Plaza	Full	Yes	No	No	No	No	Yes
Abington	Bedford Street (Route 18)	Randolph Street (Route 139)	Full	Yes	Yes	No	No	No	No
Abington	Brockton Avenue (Route 123)	Groveland Street	Full	No	No	No	No	No	No
Abington	Brockton Avenue (Route 123)	Wal-Mart	Full	No	No	No	No	No	No
Abington	Brockton Avenue (Route 123)	Washington Street	Full	Yes	Yes	No	No	No	No
Abington	Centre Avenue (Route 123)	Plymouth Street (Route 58)	Full	Yes	Yes	No	No	No	No
Abington	Centre Avenue (Route 123)	Stop & Shop / Target	Full	Yes	Yes	No	No	No	No
Abington	Centre Avenue (Route 123)	Washington Street	Full	Yes	Yes	No	No	No	No
Abington	North Avenue (Route 139)	Adams Street (Route 58)	Full	Yes	Yes	No	No	No	No
Abington	Plymouth Street (Route 58)	Central Street	Full	Yes	Yes	No	No	No	No
Abington	Plymouth Street (Route 58)	Summer Street	Full	Yes	Yes	No	No	No	No
Avon	East Main Street (Route 28)	Harrison Boulevard	Full	Yes	No	No	No	No	No
Avon	Harrison Boulevard	Pond Street	Full	No	No	No	No	No	No
Avon	Harrison Boulevard	West Main Street	Full	Yes	Yes	No	Yes	No	Yes
Avon	Main Street (Route 28)	West Main Street	Full	Yes	Yes	No	No	No	No
Avon	Memorial Drive (Route 28)	Wal-Mart	Full	Yes	No	No	No	No	No
Avon	New Pond Street	Stockwell Drive	Full	No	No	No	No	No	No
Avon	North Main Street (Route 28)	e/W High Street	Full	Yes	Yes	No	No	No	No
Avon	Page Street	Bodwell Street	Full	Yes	Yes	No	No	No	No
Bridgewater	Broad Street (Route 18)	Central Square	Full	Yes	Yes	No	No	No	No
Bridgewater	Broad Street (Route 18)	Spring Street	Full	Yes	Yes	No	No	No	No
Bridgewater	Center Street	High School	Full	Yes	Yes	No	Yes	No	No
Bridgewater	Main Street (Route 28)	High Street	Full	Yes	Yes	No	No	No	No
Bridgewater	Pleasant Street (Route 104)	Center Street	Full	Yes	Yes	No	No	No	No
Bridgewater	Pleasant Street (Route 104)	Elm Street	Full	Yes	Yes	No	Yes	No	No
Bridgewater	Pleasant Street (Route 104)	Prospect Street	Full	Yes	Yes	No	No	No	No
Bridgewater	Plymouth Street (Route 104)	Spring Street	Full	Yes	Yes	No	No	No	No
Bridgewater	Plymouth Street (Route 104)	Summer Street	Full	Yes	Yes	No	No	No	No

This Page Is Purposely Left Blank

Appendix A: Pedestrian and Bicycle Amenities in Existing Traffic Signal Systems (continued)

TOWN	MAJOR STREET	CROSS STREET	TYPE	CROSS- WALKS	PEDESTRIAN		ADA		BIKE LOOPS
					CALL BUTTONS	COUNT- DOWN	Truncated Domes	Audible	
Brockton	Belmont Street (Route 123)	Ash Street	Full	Yes	Yes	No	No	No	No
Brockton	Belmont Street (Route 123)	Forest Avenue	Full	Yes	No	No	No	No	No
Brockton	Belmont Street (Route 123)	Main Street	Full	Yes	Yes	No	No	No	No
Brockton	Belmont Street (Route 123)	Manley Street	Full	Yes	No	No	No	No	No
Brockton	Belmont Street (Route 123)	Pearl Street	Full	Yes	No	No	No	No	No
Brockton	Belmont Street (Route 123)	Stop & Shop	Full	Yes	No	No	No	No	No
Brockton	Belmont Street (Route 123)	Torrey Street	Full	Yes	Yes	No	No	No	No
Brockton	Belmont Street (Route 123)	VA Hospital	Full	Yes	Yes	No	No	No	No
Brockton	Belmont Street (Route 123)	Warren Avenue	Full	Yes	Yes	No	No	No	No
Brockton	Belmont Street (Route 123)	West Street	Full	Yes	Yes	No	No	No	No
Brockton	Centre Street (Route 123)	Commercial Street	Full	Yes	Yes	No	No	No	No
Brockton	Centre Street (Route 123)	Lyman Street	Full	Yes	Yes	No	No	No	No
Brockton	Centre Street (Route 123)	Main Street	Full	Yes	Yes	No	No	No	No
Brockton	Centre Street (Route 123)	Montello Street (Route 28)	Full	Yes	Yes	No	No	No	No
Brockton	Centre Street (Route 123)	Quincy Street	Full	Yes	Yes	No	No	No	No
Brockton	Court Street	Cary Street	Full	Yes	Yes	No	No	No	No
Brockton	Court Street	Commercial Street	Full	Yes	Yes	No	No	No	No
Brockton	Crescent Street (Route 27)	Commercial Street	Full	Yes	Yes	No	No	No	No
Brockton	Crescent Street (Route 27)	Crescent Avenue	Full	Yes	Yes	No	No	No	No
Brockton	Crescent Street (Route 27)	Lyman Street	Full	No	No	No	No	No	No
Brockton	Crescent Street (Route 27)	Main Street	Full	Yes	Yes	No	No	No	No
Brockton	Crescent Street (Route 27)	Quincy Street	Full	No	No	No	No	No	No
Brockton	Crescent Street (Route 27)	Summer Street	Full	Yes	Yes	No	No	No	No
Brockton	East Ashland Street	North Cary Street	Full	Yes	No	No	No	No	No
Brockton	Forest Avenue	Ash Street	Full	Yes	Yes	No	No	No	No
Brockton	Forest Avenue	Bouve Avenue	Full	Yes	Yes	No	No	No	No
Brockton	Main Street	Perkins Avenue	Full	Yes	Yes	No	No	No	No
Brockton	Main Street	School Street	Full	Yes	Yes	No	No	No	No
Brockton	Main Street	West Elm Street	Full	Yes	Yes	No	No	No	No

This Page Is Purposely Left Blank

Appendix A: Pedestrian and Bicycle Amenities in Existing Traffic Signal Systems continued)

TOWN	MAJOR STREET	CROSS STREET	TYPE	CROSS- WALKS	PEDESTRIAN		ADA		BIKE LOOPS
					CALL BUTTONS	COUNT- DOWN	Truncated Domes	Audible	
Brockton	Main Street (Route 28)	Brookside Avenue	Full	Yes	Yes	No	No	No	No
Brockton	Main Street (Route 28)	Maple Avenue	Full	Yes	No	No	No	No	No
Brockton	Main Street (Route 28)	Plain Street	Full	Yes	Yes	No	No	No	No
Brockton	Main Street (Route 28)	Sargents Way	Full	Yes	Yes	No	No	No	No
Brockton	Montello Street (Route 28)	Court Street	Full	Yes	Yes	No	No	No	No
Brockton	Montello Street (Route 28)	Crescent Street (Route 27)	Full	Yes	Yes	No	No	No	No
Brockton	Montello Street (Route 28)	Grove Street	Full	Yes	Yes	No	No	No	No
Brockton	Montello Street (Route 28)	Lawrence Street	Full	Yes	Yes	No	No	No	No
Brockton	Montello Street (Route 28)	Perkins Avenue	Full	Yes	Yes	No	No	No	No
Brockton	Montello Street (Route 28)	School Street	Full	Yes	Yes	No	No	No	No
Brockton	North Main Street	Battles Street	Full	Yes	Yes	No	No	No	No
Brockton	North Main Street	East Ashland Street	Full	Yes	Yes	No	No	No	No
Brockton	North Main Street	Oak Street	Full	Yes	Yes	No	No	No	No
Brockton	North Montello Street (Route 28)	Ames Street	Full	Yes	Yes	No	No	No	No
Brockton	North Montello Street (Route 28)	East Ashland Street	Full	Yes	No	No	No	No	No
Brockton	North Montello Street (Route 28)	Elliot Street	Full	Yes	Yes	No	No	No	No
Brockton	North Montello Street (Route 28)	Howard Street	Full	Yes	Yes	No	No	No	Yes
Brockton	North Pearl Street (Route 27)	Good Samaritan Hospital	Full	Yes	No	No	No	No	No
Brockton	North Pearl Street (Route 27)	Oak Street	Full	Yes	Yes	No	No	No	No
Brockton	North Quincy Street	East Ashland Street	Full	Yes	No	No	No	No	No
Brockton	Oak Street	Belair Street	Full	Yes	No	No	No	No	No
Brockton	Oak Street	Campenelli Drive	Full	Yes	No	No	No	No	No
Brockton	Oak Street	DW Field Park	Full	Yes	No	No	No	No	No
Brockton	Oak Street	Madrid Square	Full	Yes	Yes	No	No	No	No
Brockton	Oak Street	Westgate Pavilion	Full	Yes	Yes	No	No	No	No
Brockton	Pleasant Street	Pearl Street	Full	Yes	Yes	No	No	No	No
Brockton	Pleasant Street (Route 27)	Alger Street (Route 14)	Full	Yes	Yes	No	No	No	No
Brockton	Pleasant Street (Route 27)	Belair Street	Full	Yes	Yes	No	No	No	No
Brockton	Pleasant Street (Route 27)	Main Street	Full	Yes	Yes	No	No	No	No
Brockton	Pleasant Street (Route 27)	Warren Avenue	Full	Yes	Yes	No	No	No	No
Brockton	Pleasant Street (Route 27)	West Street	Full	Yes	No	No	No	No	No

This Page Is Purposely Left Blank

Appendix A: Pedestrian and Bicycle Amenities in Existing Traffic Signal Systems continued)

TOWN	MAJOR STREET	CROSS STREET	TYPE	CROSS- WALKS	PEDESTRIAN		ADA		BIKE LOOPS
					CALL BUTTONS	COUNT- DOWN	Truncated Domes	Audible	
Brockton	Reynolds Highway (Route 27)	North Pearl Street	Full	Yes	No	No	No	No	No
Brockton	Reynolds Highway (Route 27)	Pleasant Street (Route 27)	Full	No	No	No	No	No	No
Brockton	Reynolds Highway (Route 27)	Westgate Mall	Full	No	No	No	No	No	No
Brockton	School Street	Commercial Street	Full	Yes	Yes	No	No	No	No
Brockton	Summer Street	Lyman Street	Full	Yes	No	No	No	No	No
Brockton	Torrey Street	Pearl Street	Full	Yes	Yes	No	No	No	No
Brockton	Warren Avenue	Forest Avenue	Full	Yes	Yes	No	No	No	No
Brockton	Warren Avenue	High Street	Full	Yes	Yes	No	No	No	No
Brockton	Warren Avenue	Legion Parkway	Full	Yes	Yes	No	No	No	No
Brockton	Warren Avenue	West Elm Street	Full	Yes	Yes	No	No	No	No
Brockton	West Chestnut Street	Manley Street	Full	Yes	Yes	No	No	No	No
Brockton	West Street	Torrey Street	Full	Yes	Yes	No	No	No	No
Brockton	West Street	West Elm Street	Full	Yes	Yes	No	No	No	No
East Bridgewater	Bedford Street (Route 18)	Central Street	Full	Yes	Yes	No	No	No	No
East Bridgewater	Bedford Street (Route 18)	Highland Street	Full	No	No	No	No	No	No
East Bridgewater	Bedford Street (Route 18)	West Street (Route 106)	Full	Yes	Yes	No	No	No	No
East Bridgewater	Bedford Street (Route 18)	Whitman Street (Route 106)	Full	Yes	Yes	No	No	No	No
East Bridgewater	Oak Street (Route 14)	Franklin Street (Route 27)	Full	Yes	Yes	No	Yes	No	No
East Bridgewater	Washington Street	Central Street	Full	No	No	No	No	No	No
Easton	Belmont Street (Route 123)	Stonehill College	Full	No	No	No	No	No	No
Easton	Foundry Street (Route 106)	Depot Street (Route 123)	Full	Yes	Yes	No	No	No	No
Easton	Foundry Street (Route 106)	Eastman Street (Route 123)	Full	Yes	Yes	No	No	No	No
Easton	Foundry Street (Route 106)	Turnpike Street (Route 138)	Full	No	No	No	No	No	No
Easton	Washington Street (Route 138)	Belmont Street (Route 123)	Full	Yes	No	No	No	No	No
Easton	Washington Street (Route 138)	Central Street	Full	Yes	Yes	No	No	No	No
Easton	Washington Street (Route 138)	Depot Street (Route 123)	Full	Yes	No	No	No	No	No
Easton	Washington Street (Route 138)	Main Street	Full	Yes	Yes	No	No	No	No
Easton	Washington Street (Route 138)	Roche Brothers	Full	Yes	Yes	No	No	No	No
Easton	Washington Street (Route 138)	Stonehill College	Full	No	No	No	No	No	No

This Page Is Purposely Left Blank

Appendix A: Pedestrian and Bicycle Amenities in Existing Traffic Signal Systems continued)

TOWN	MAJOR STREET	CROSS STREET	TYPE	CROSS- WALKS	PEDESTRIAN		ADA		BIKE LOOPS
					CALL BUTTONS	COUNT- DOWN	Truncated Domes	Audible	
Halifax	Plymouth Street (Route 106)	Monponsett Street (Route 58)	Full	Yes	Yes	No	No	No	No
Halifax	Plymouth Street (Route 106)	Stop & Shop	Full	Yes	Yes	No	No	No	No
Halifax	Plymouth Street (Route 106)	Wal-Mart	Full	Yes	Yes	No	No	No	No
Hanson	Liberty Street (Route 58)	County Road (Route 14)	Full	Yes	No	No	No	No	No
Hanson	Liberty Street (Route 58)	Winter Street	Full	Yes	No	No	No	No	No
Hanson	Main Street (Route 27)	Indian Head Street (Route 58)	Full	No	No	No	No	No	No
Kingston	Elm Street	Jones River	Full	No	No	No	No	No	No
Kingston	Independence Mall Way	Cranberry Road	Full	Yes	No	No	No	No	Yes
Kingston	Main Street (Route 106)	Pembroke Street (Route 27)	Full	Yes	Yes	No	No	No	No
Kingston	Main Street (Route 3A)	Brook Street (Route 80)	Full	No	No	No	Yes	No	No
Kingston	Main Street (Route 3A)	Hilltop Avenue	Full	Yes	Yes	No	No	No	No
Kingston	Main Street (Route 3A)	Route 3 SB Ramps	Full	Yes	Yes	No	No	No	No
Kingston	Smiths Lane	Independence Mall Way	Full	No	No	No	No	No	Yes
Kingston	Smiths Lane	Route 3 NB Ramps	Full	No	No	No	No	No	Yes
Kingston	Smiths Lane	Route 3 SB Ramps	Full	No	No	No	No	No	Yes
Kingston	Summer Street (Route 3A)	Evergreen Street	Full	Yes	Yes	No	Yes	No	Yes
Kingston	Summer Street (Route 3A)	Tremont Street	Full	Yes	Yes	No	No	No	No
Kingston	Summer Street (Route 53)	Duxbury Road (Route 3A)	Full	No	No	No	No	No	No
Pembroke	Center Street (Route 36)	Mattakeeset Street (Route 14)	Full	Yes	Yes	No	Yes	No	Yes
Pembroke	Church Street (Route 139)	North River Plaza	Full	Yes	Yes	No	No	No	Yes
Pembroke	Church Street (Route 139)	Oak Street	Full	Yes	Yes	No	No	No	Yes
Pembroke	Church Street (Route 139)	Route 3 NB Ramps	Full	No	No	No	No	No	Yes
Pembroke	Church Street (Route 139)	Route 3 SB Ramps	Full	No	No	No	No	No	Yes
Pembroke	Church Street (Route 139)	Union Street	Full	Yes	Yes	No	No	No	Yes
Pembroke	School Street (Route 27)	Center Street (Route 36)	Full	Yes	Yes	No	No	No	Yes
Pembroke	School Street (Route 27)	Mattakeeset Street	Full	Yes	Yes	No	No	No	Yes
Pembroke	Washington Street (Route 53)	Barker Street (Route 14)	Full	No	No	No	No	No	No
Pembroke	Washington Street (Route 53)	Schoosett Street (Route 139)	Full	Yes	No	No	Yes	No	No

This Page Is Purposely Left Blank

Appendix A: Pedestrian and Bicycle Amenities in Existing Traffic Signal Systems continued)

TOWN	MAJOR STREET	CROSS STREET	TYPE	CROSS- WALKS	PEDESTRIAN		ADA		BIKE LOOPS
					CALL BUTTONS	COUNT- DOWN	Truncated Domes	Audible	
Plymouth	Cherry Street	Standish Avenue	Full	Yes	Yes	No	No	No	No
Plymouth	Commerce Way	Cherry Street	Full	No	Yes	No	Yes	No	Yes
Plymouth	Commerce Way	Colony Place	Full	Yes	Yes	No	Yes	No	Yes
Plymouth	Commerce Way	McAuliffe Way	Full	Yes	Yes	No	Yes	No	Yes
Plymouth	Commerce Way	Route 44 EB Ramps	Full	No	No	No	Yes	No	Yes
Plymouth	Court Street (Route 3A)	Cherry Street	Full	Yes	Yes	No	No	No	No
Plymouth	Court Street (Route 3A)	Cordage Park	Full	Yes	Yes	No	No	No	No
Plymouth	Court Street (Route 3A)	Samoset Street (Route 44)	Full	Yes	Yes	Yes	No	No	No
Plymouth	Long Pond Road	Camelot Drive	Full	Yes	Yes	No	Yes	No	Yes
Plymouth	Long Pond Road	Home Depot Drive	Full	Yes	Yes	No	Yes	No	Yes
Plymouth	Long Pond Road	Obery Street	Full	Yes	Yes	No	Yes	No	Yes
Plymouth	Long Pond Road	Route 3 NB Ramps	Full	No	No	No	Yes	No	Yes
Plymouth	Long Pond Road	Route 3 SB Ramps	Full	Yes	No	No	Yes	No	Yes
Plymouth	Long Pond Road	Shops At Five	Full	Yes	Yes	No	Yes	No	Yes
Plymouth	Main Street (Route 3A)	Leyden Street	Full	Yes	Yes	Yes	No	No	No
Plymouth	Plympton Road (Route 80)	Carver Road	Full	No	No	No	No	No	No
Plymouth	Plympton Road (Route 80)	Commerce Way	Full	Yes	Yes	No	Yes	No	Yes
Plymouth	Rocky Hill Road	Edison Access	Full	No	No	No	No	No	No
Plymouth	Samoset Street	Carver Road	Full	No	No	No	No	No	No
Plymouth	Samoset Street	Pilgrim Hill Road	Full	Yes	Yes	No	Yes	No	Yes
Plymouth	Samoset Street	Route 3 NB Ramps	Full	Yes	No	No	No	No	No
Plymouth	Samoset Street	Route 3 SB Ramps	Full	Yes	No	No	No	No	No
Plymouth	South Meadow Road	Federal Furnace Road	Full	No	No	No	No	No	No
Plymouth	State Road (Route 3A)	White Horse Road	Full	Yes	Yes	No	No	No	No
Plymouth	Summer Street	Pilgrim Hill Road	Full	No	No	No	No	No	No
Plymouth	Warren Avenue (Route 3A)	Sandwich Street	Full	Yes	Yes	No	No	No	No
Plympton	Palmer Road (Route 58)	Main Street	Full	Yes	Yes	No	Yes	No	Yes
Stoughton	Central Street	Lincoln Street	Full	Yes	Yes	No	No	No	No
Stoughton	Central Street	Pearl Street	Full	Yes	Yes	No	No	No	No
Stoughton	Central Street	Turnpike Street	Full	Yes	Yes	No	No	No	No

This Page Is Purposely Left Blank

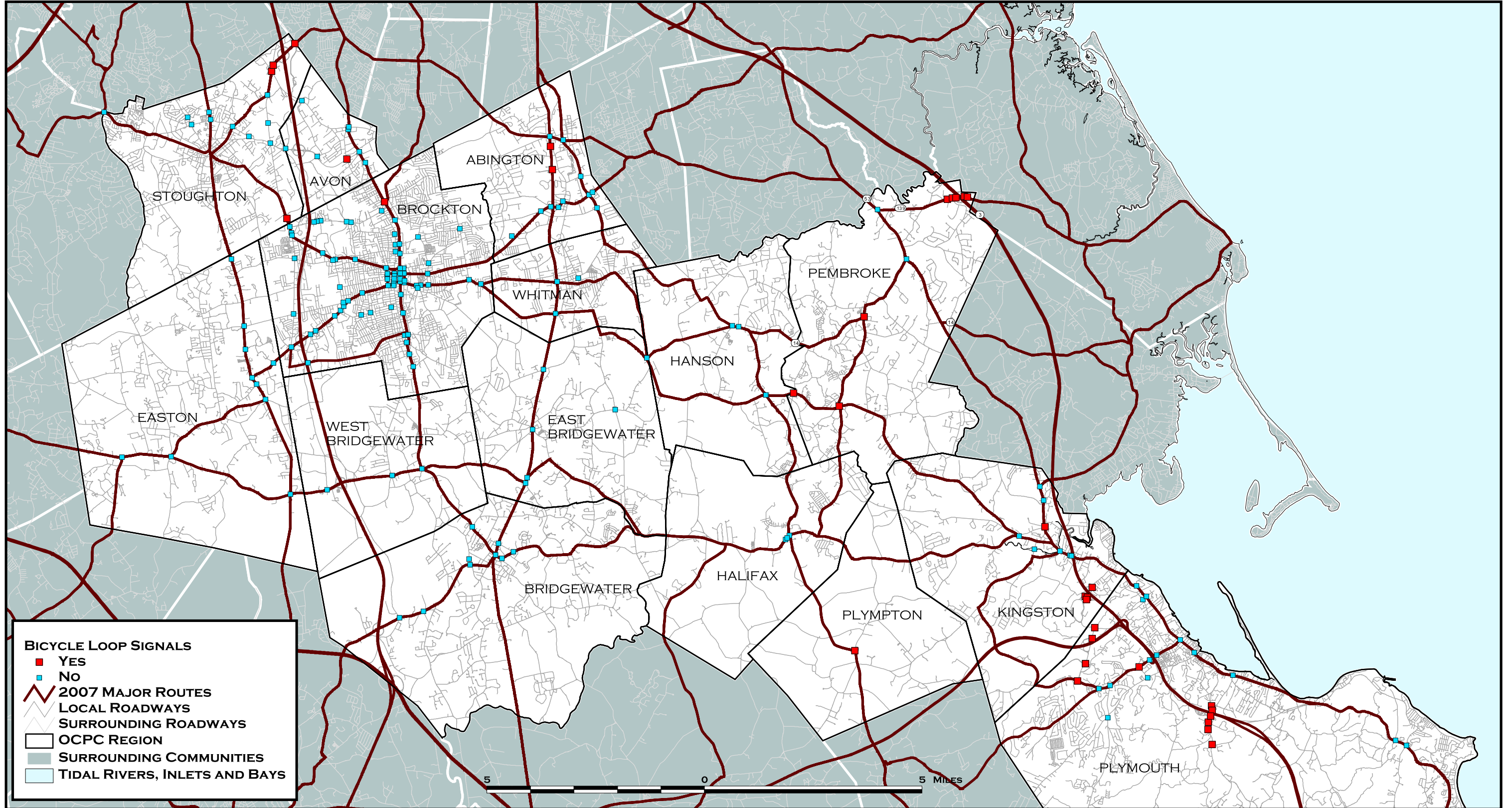
Appendix A: Pedestrian and Bicycle Amenities in Existing Traffic Signal Systems continued)

TOWN	MAJOR STREET	CROSS STREET	TYPE	CROSS- WALKS	PEDESTRIAN		ADA		BIKE LOOPS
					CALL BUTTONS	COUNT- DOWN	Truncated Domes	Audible	
Stoughton	Lindelof Avenue (Route 139)	Technology Center Drive	Full	No	No	No	No	No	Yes
Stoughton	Park Street (Route 27)	RK Plaza	Full	Yes	Yes	No	No	No	Yes
Stoughton	Pearl Street	Ralph Mann Drive	Full	Yes	Yes	No	No	No	No
Stoughton	Pleasant Street (Route 139)	Central Street	Full	Yes	Yes	No	No	No	No
Stoughton	Pleasant Street (Route 139)	Turnpike Street	Full	Yes	Yes	No	No	No	No
Stoughton	Sharon Street (Route 27)	Bay Road	Full	Yes	Yes	No	No	No	No
Stoughton	Turnpike Street	IKEA Way	Full	No	No	No	No	No	No
Stoughton	Turnpike Street (Route 139)	Page Street	Full	Yes	Yes	No	Yes	No	Yes
Stoughton	Turnpike Street (Route 139)	Target Plaza	Full	Yes	Yes	No	Yes	Yes	Yes
Stoughton	Washington Street (Route 138)	Central Street	Full	Yes	No	No	No	No	No
Stoughton	Washington Street (Route 138)	Stop & Shop	Full	Yes	No	No	No	No	No
West Bridgewater	West Center Street (Route 106)	Manley Street	Full	Yes	Yes	No	Yes	No	No
West Bridgewater	West Center Street (Route 106)	North Elm Street	Full	Yes	No	No	No	No	No
West Bridgewater	West Center Street (Route 106)	North Main Street (Route 28)	Full	Yes	No	No	No	No	No
Whitman	Bedford Street (Route 18)	Auburn Street (Route 14)	Full	Yes	Yes	No	No	No	No
Whitman	Bedford Street (Route 18)	Super Stop & Shop	Full	Yes	Yes	No	No	No	No
Whitman	Bedford Street (Route 18)	Temple Street (Route 27)	Full	Yes	Yes	No	No	No	No
Whitman	Temple Street (Route 27)	Corthell Avenue	Full	Yes	Yes	No	No	No	No

BICYCLE ACCOMMODATIONS AT TRAFFIC SIGNAL LOCATIONS



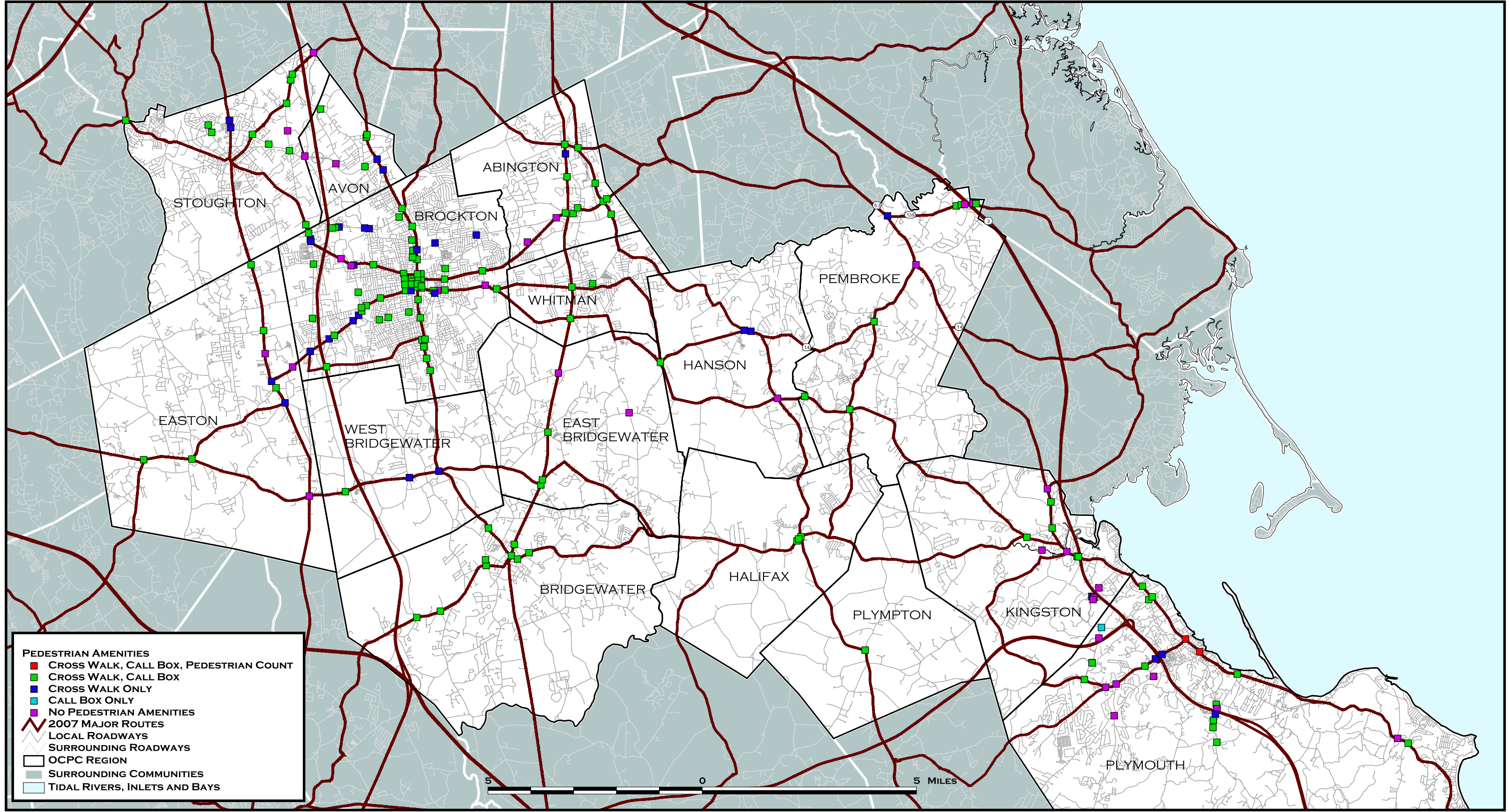
FIGURE A2 - 1



PEDESTRIAN AMENITIES AT TRAFFIC SIGNAL LOCATIONS



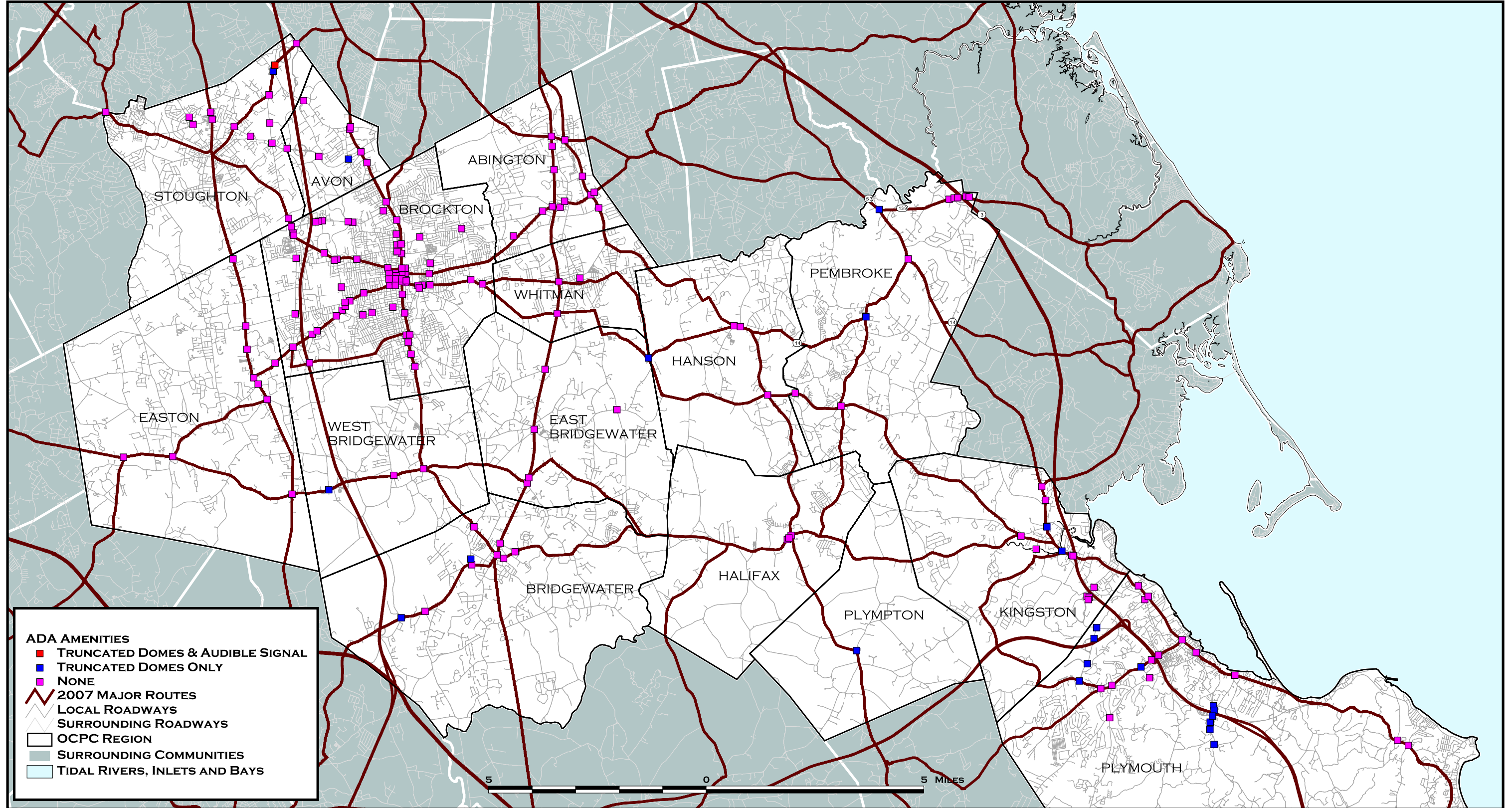
FIGURE A2-2



HANDICAPPED PEDESTRIAN ACCESSIBILITY AT TRAFFIC SIGNAL LOCATIONS



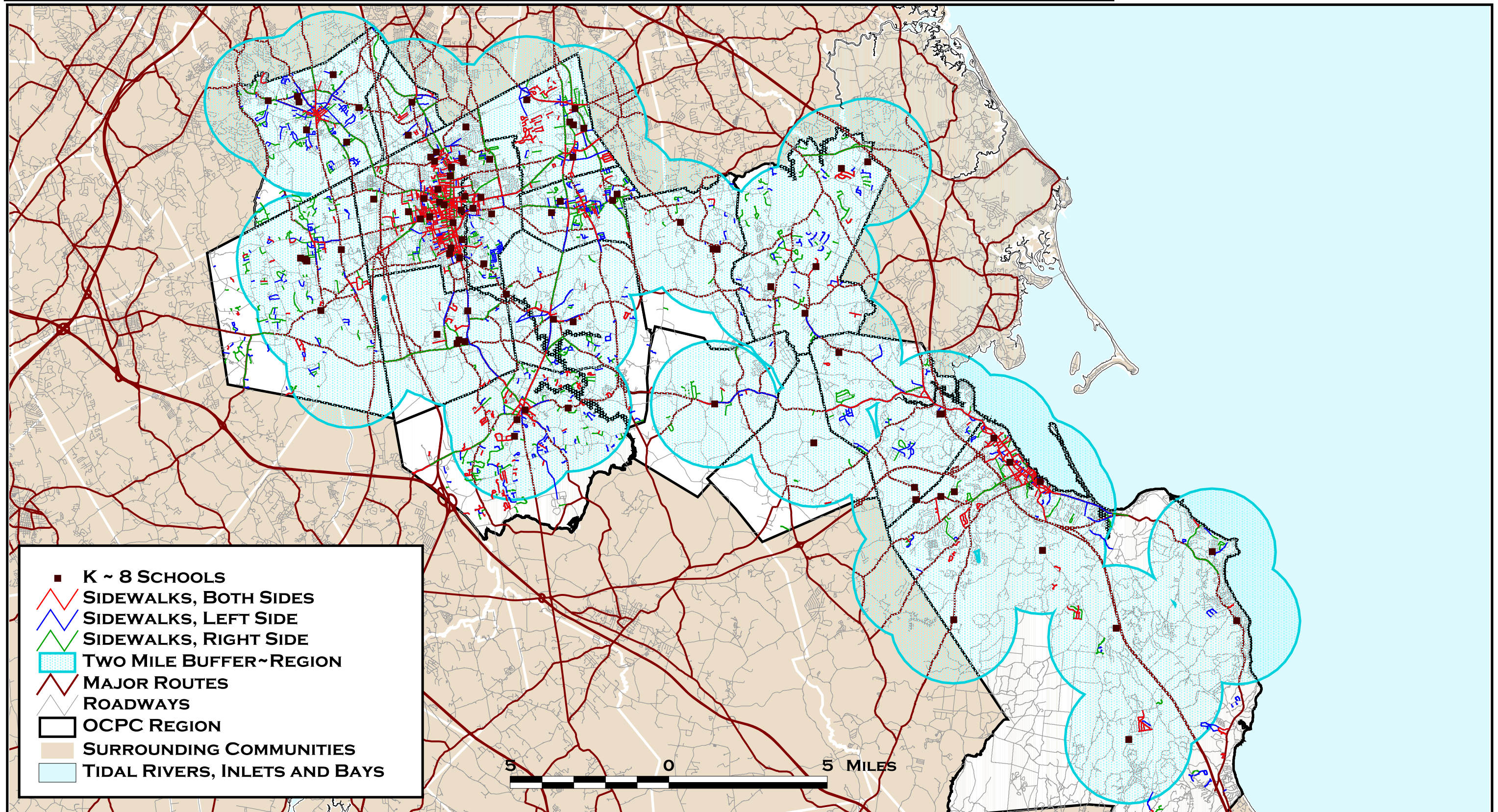
FIGURE A2-3



K-8 SCHOOLS & SRTS IMPROVEMENT ELIGIBILITY ZONES



FIGURE A3 - 1



- K ~ 8 SCHOOLS
- SIDEWALKS, BOTH SIDES
- SIDEWALKS, LEFT SIDE
- SIDEWALKS, RIGHT SIDE
- TWO MILE BUFFER~REGION
- MAJOR ROUTES
- ROADWAYS
- OCPC REGION
- SURROUNDING COMMUNITIES
- TIDAL RIVERS, INLETS AND BAYS

5 0 5 MILES



OLD COLONY PLANNING COUNCIL
GIS DATA SOURCES: MASSGIS, EOTPW, OCPC

70 SCHOOL STREET

BROCKTON, MA 02301

SEPTEMBER, 2008