



CAPE COD  
COMMISSION

**2020 REGIONAL TRANSPORTATION PLAN**

# Technical Appendix F: Bicycle & Pedestrian

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# Technical Appendix F: Bicycle & Pedestrian

This appendix presents an overview of bicycle and pedestrian planning on Cape Cod, including discussion of crash and road safety data, existing facilities, safety and planning studies, and planning efforts related to bicycles and pedestrians on Cape Cod.

## **CAPE COD BICYCLISTS AND PEDESTRIANS**

Bicycling is popular throughout Cape Cod, both as a transportation mode and a recreational activity. Local residents and visitors alike bicycle and walk along area roads and off-road paths to reach local shops and services, town centers, workplaces, beaches, and other attractions. Bicycling and pedestrian improvements are underway in all Cape Cod communities. The regional bicycle and pedestrian facility network is growing, particularly with the recent extension of the Cape Cod Rail Trail through Yarmouth and continued future extensions westward to Barnstable and eastward through Outer Cape communities. Xx towns have designated bicycle and pedestrian committees that are working to address bicyclist and pedestrian needs in their communities. MassDOT and the Cape Cod Commission are working with local communities to address deficiencies and encourage “Complete Streets” projects. The American League of Bicyclists designated both Provincetown and Falmouth “Bike Friendly Communities.”

Despite the popularity of bicycling and walking and recent improvements to the bicycle/pedestrian facility network, many areas are hazardous and uncomfortable to bike or walk to due to roads with high traffic volumes and speeds and no bicycle or pedestrian accommodations. Identifying and addressing gaps in the network is important for encouraging healthy transportation options on Cape Cod.

### **Cape Cod Residents Who Bicycle and Walk to Work**

The U.S. Census Bureau provides information on means of transportation through the “American Community Survey” – the latest tabulation being available for 2006-2010. The table shows the numbers and percentages of people who bicycle or walk to work, which is one indicator of the level of bicycling and walking for transportation purposes. It captures only year-round residents and does not include Cape Cod seasonal workers, most of whom commute by bike or on foot. Overall, about 4.5% of Cape Cod’s workers walk or bike to work.

## VEHICULAR CRASH RECORDS

The following sections include discussions of vehicular crash records that include bicyclists or pedestrians.

### Bicyclist Crash History

Bicycling on Cape Cod roadways can be a challenge. The mixture of narrow roadways, high traffic volumes, and pleasant summer weather creates a difficult vehicle-bicycle interaction. Cape Cod's pleasant summer weather brings bicyclists onto roadways at the time when vehicular traffic is at its peak. As a healthy transportation mode that provides pollution-free travel, improving roads and providing facilities that are comfortable for cyclists and pedestrians is a beneficial goal for Cape Cod communities. Bicyclist and pedestrian crashes are shown in the figure on the following page.

Table 1 includes a town-by-town breakdown of bicycle-vehicle crashes for the years 2012-2016. With 149 reported crashes over the three-year period, Barnstable had the greatest number of bicyclist-vehicle crashes (Falmouth was second with 74 crashes). Staff has observed numerous cyclists along Route 28 (where many of the identifiable crashes occurred) during the summer, when much of the Cape's seasonal workforce bicycles to work, often in locations with high traffic volumes and no bicycle accommodations

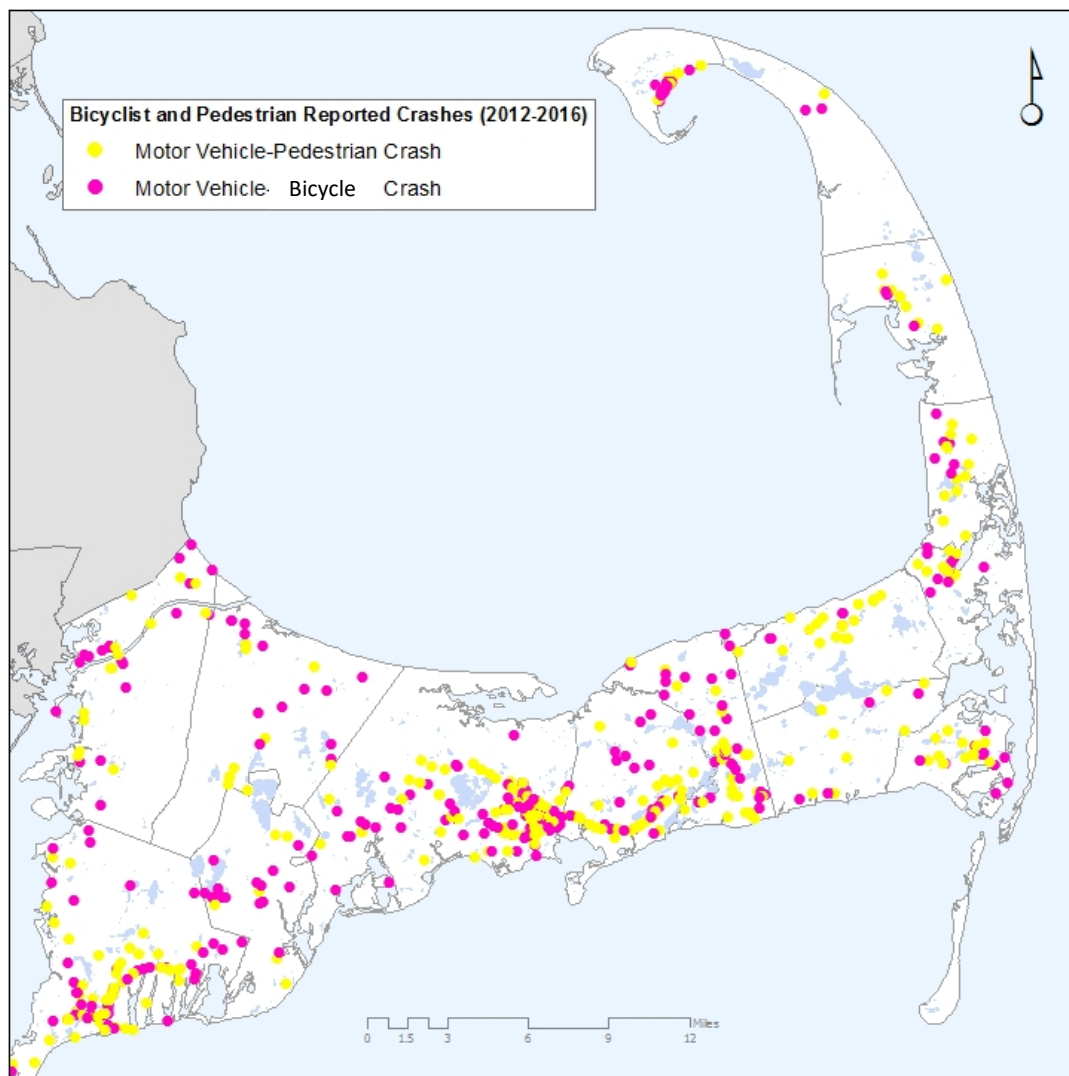


FIGURE 1. Bicyclist and Pedestrian Vehicular Crashes

TABLE 1. Bicyclist-Vehicle Crash History (2012-2016)

TOWN	ALL CRASHES (5-YEAR TOTAL)	FATAL CRASHES (5-YEAR TOTAL)
Bourne	14	0
Sandwich	14	0
Falmouth	74	0
Mashpee	7	0
Barnstable	149	2
Yarmouth	64	0
Dennis	39	0
Harwich	12	0
Chatham	15	0
Brewster	19	1
Orleans	13	0
Eastham	18	1
Wellfleet	12	1
Truro	3	0
Provincetown	22	0
<b>Total</b>	<b>475</b>	<b>5</b>

(Source: MassDOT)



## Pedestrian – Vehicular Crashes

Pedestrians are among the most vulnerable users of the transportation system. Safe accommodations for walking can encourage a reduction in traffic congestion and air pollution and encourage a healthy travel mode. **Error! Reference source not found.** shows the number of vehicle-pedestrian crashes for each town. Barnstable had the highest number (129) of crashes reported from 2012 to 2016. This number represents both the high number of pedestrians who walk along Route 28 in the summer and the deficiencies in pedestrian accommodation (e.g., safe pedestrian crossings at intersections) resulting in the high crash history.

TABLE 2. Pedestrian-Vehicle Crash History (2012-2016)

TOWN	ALL CRASHES (5-YEAR TOTAL)	FATAL CRASHES (5-YEAR TOTAL)
Bourne	30	1
Sandwich	19	0
Falmouth	73	2
Mashpee	18	1
Barnstable	129	2
Yarmouth	44	4
Dennis	38	2
Harwich	5	0
Chatham	12	2
Brewster	6	0
Orleans	16	0
Eastham	8	1
Wellfleet	6	0
Truro	3	0
Provincetown	27	0
<b>Total</b>	<b>434</b>	<b>15</b>

(Source: MassDOT)

## **ROADWAY SAFETY AUDITS – BICYCLE/PEDESTRIAN RECOMMENDATIONS**

MassDOT oversees Road Safety Audits (RSAs), a process that brings together a multi-disciplinary group of state and community officials and other stakeholders in an intensive review of high-crash locations' operational and geometric deficiencies. Each audit includes a review of traffic and crash information and onsite field review. The audits include analysis of bicyclist and pedestrian safety. The RSA team looks at crossing conditions, accessibility, bicyclist and pedestrian comfort; vehicle conflicts; visibility; and other bicycle/pedestrian safety factors. Improvement recommendations might include installing curb ramps; repainting crosswalks and lanes; installation of an island for bicyclist/ pedestrian refuge; shoulder widening or bike lane; bicycle detection; advance pedestrian/bicyclist warning signage; etc.

For further information on individual RSA's, the Safety Appendix of this document. The full list RSA's can be seen at [www.capecodcommission.org/safety](http://www.capecodcommission.org/safety)

Other Safety Studies In addition to RSA's Cape Cod Commission staff also conducts location-specific safety studies throughout the region, upon request by a town or MassDOT. These studies are available at: [www.capecodcommission.org/safety](http://www.capecodcommission.org/safety)

## **BICYCLE AND PEDESTRIAN PLANNING**

The following sections provide discussion on types of bicyclists; references to bicycle and pedestrian facility design guidelines, discussion of the regional network vision; descriptions of the Cape's existing bicycle and pedestrian infrastructure and a summaries of recent bicycle/pedestrian studies and plans.

The Commission is currently involved in bicycle/pedestrian planning efforts with several Cape Cod communities. It is anticipated that recommendations from these studies will yield projects for inclusion in the Regional Transportation Plan.

### **Types of Bicyclists**

Bicyclists with different levels of experience, confidence, and purpose for riding have varied accommodation needs. A strong and effective bicycle plan meets the needs of bicyclists with varied abilities through a combination of facility types, both on and off-road. Transportation planners/designers also consider their levels of comfort and stress. A new bicyclist typology has

emerged over the last decade that helps planners understand the facility needs of the different types of cyclists.<sup>1</sup>

- Strong and fearless – people willing to ride with limited or no bike infrastructure
- Enthused and confident – people willing to ride if some bike infrastructure is provided
- Interested but concerned, wants to ride and would if they felt safer on the roadways—if cars were slower and less frequent, and if there were more quiet streets with few cars and paths without any cars at all.
- “No way, now how” – people who are unwilling to ride under any circumstance

In both nation-wide and local surveys, a majority of respondents identified as “interested but concerned.” Such riders want to bicycle more and would if they felt safer – either by accessing low-speed roads or using bicycle infrastructure. Designing bicycle networks for this type of rider would encourage more everyday riding. While the typologies are based on surveys and responses from urban riders, they are likely applicable for bicyclists on Cape Cod.

## BICYCLE AND PEDESTRIAN FACILITY DESIGN

The MassHighway *Project Development and Design Guide* provides guidelines for bicycle and pedestrian facilities and can be referenced at:

<https://www.mass.gov/files/documents/2018/08/08/pddg.pdf>

FHWA provides bicycle and pedestrian facility design guidelines useful and applicable for parts of Cape Cod in a 2016 document entitled Small Town and Rural Multimodal Networks.

[https://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/small\\_towns/fhwahep17024lg.pdf](https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/fhwahep17024lg.pdf). The guide addresses challenges to small or rural towns and provides case studies. It groups bike and pedestrian facilities as follows:

- **Mixed Traffic Facilities** such as yield roadways, bike boulevards, and advisory shoulders.
- **Visually Separated Facilities** such as paved shoulders and traditional bike lanes.
- **Physically Separated Facilities** such as shared-use paths, sidepaths, sidewalks, and protected bike lanes.

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<sup>1</sup> Jennifer Dill and Nathan McNeil, “Revisiting the Four Types of Cyclists: Findings from a National Survey,” Transportation Research Record: Journal of the Transportation Research Board, 2587: 90-99, 2016.

## REGIONAL VISION & GOALS

"Vision 88" proposes a continuous shared-use path network of 88 miles from Woods Hole to Provincetown. The route will consist of existing facilities such as the Cape Cod Rail Trail, the Shining Sea Bikeway, and the Cape Cod Canal bike path. Newer segments are in various stages of planning and design. As an overall framework, the following figure represents an overall vision for bicycle path connections to and within Cape Cod. The segments shown in green represent existing bicycle paths. Orange line segments represent generalized routes; detailed alignments are to be defined. This figure represents the Cape Cod Commission's vision for expansion of the Cape's bicycle path infrastructure.

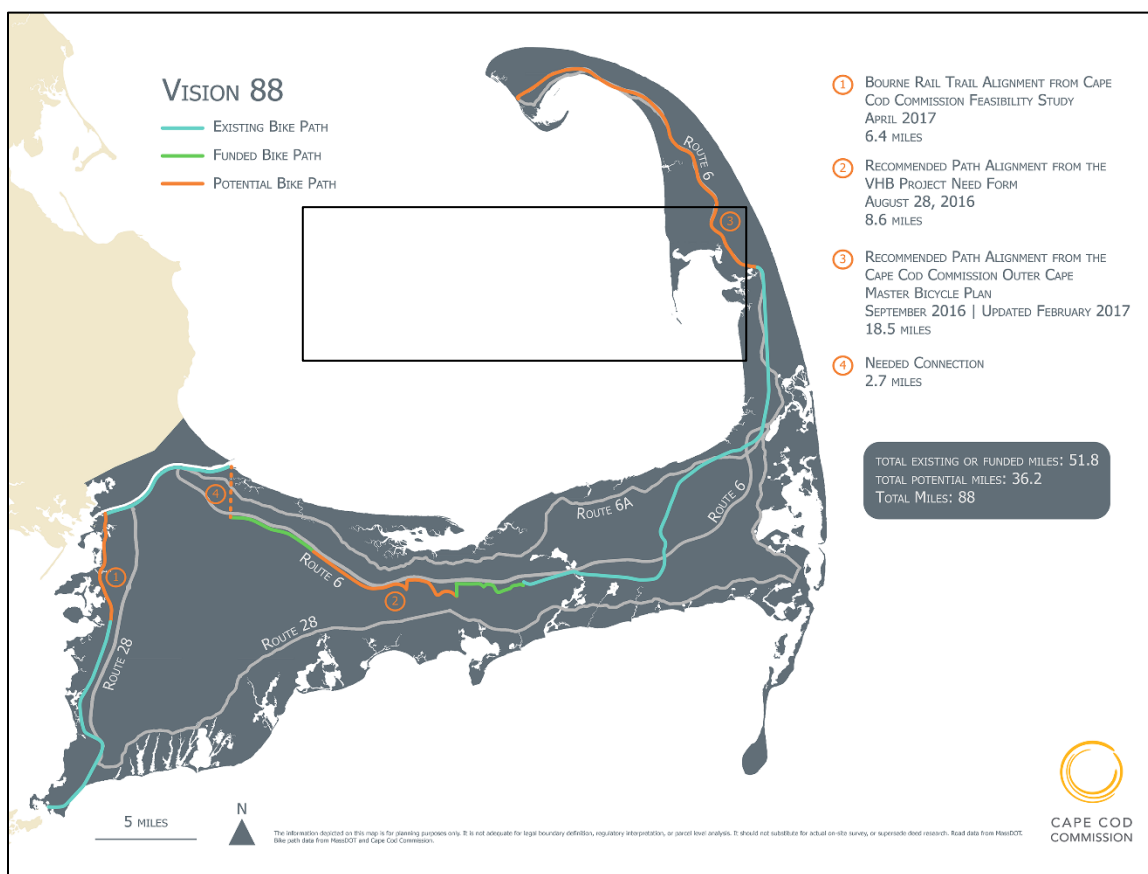


FIGURE 2. Shared Use Path Vision Map

The following subsections include text, figures and tables that define and describe the bicycle and pedestrian infrastructure of Cape Cod. This information forms the baseline of the existing system and helps planners identify gaps and opportunities to improve bicycling and walking on Cape Cod.

## EXISTING BICYCLE AND PEDESTRIAN FACILITY NETWORK

### Multi-Use Paths

A multi-use path is a path or trail that is physically separated from motor vehicle traffic located either within the road right-of-way or within an independent right-of-way. Also referred to as shared-use paths, they include bicycle paths, rail-trails or other facilities built for bicycle and pedestrian traffic and allowing other non-motorized travel modes such as skateboards and horses.

### Shared Use Path Dimensions

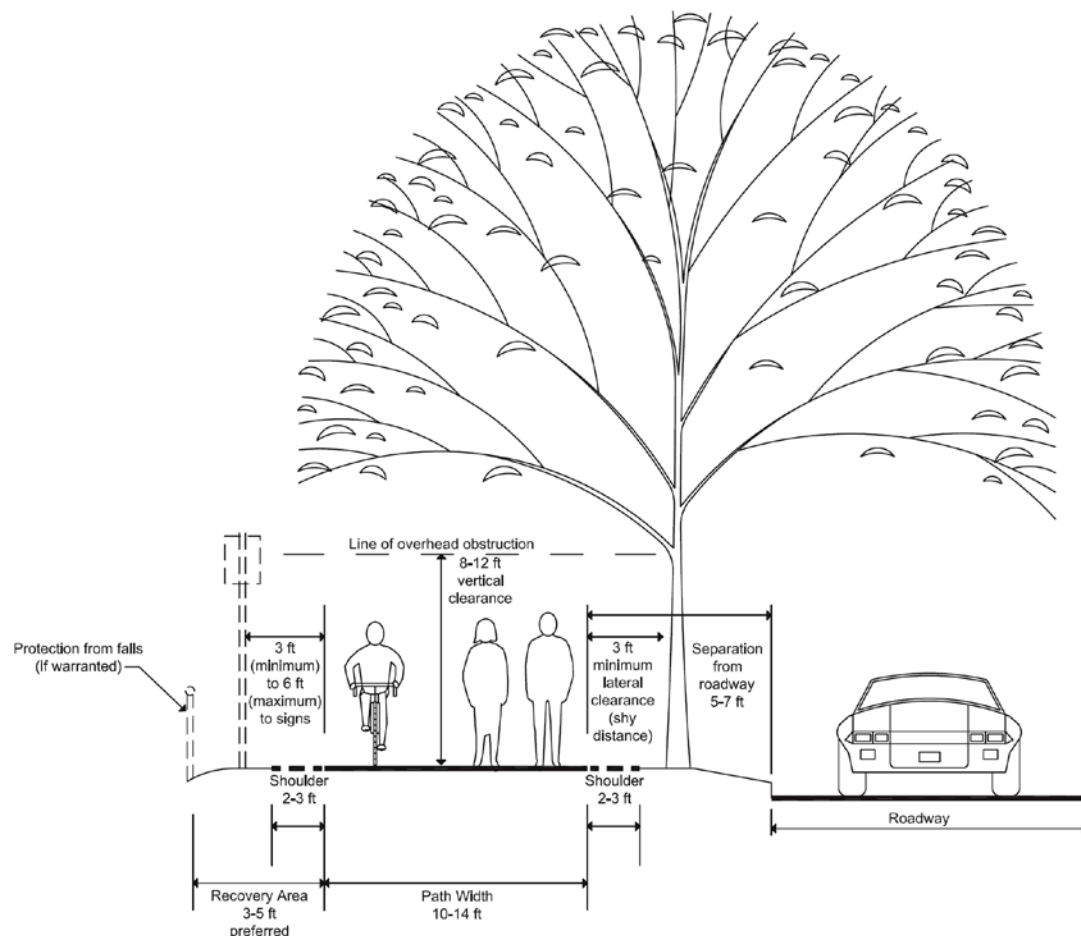


FIGURE 3. MassDOT Shared Use Path Dimensions

(Source: MassHighway Design Guide)

There are currently 91 miles of paved multi-use paths on Cape Cod.

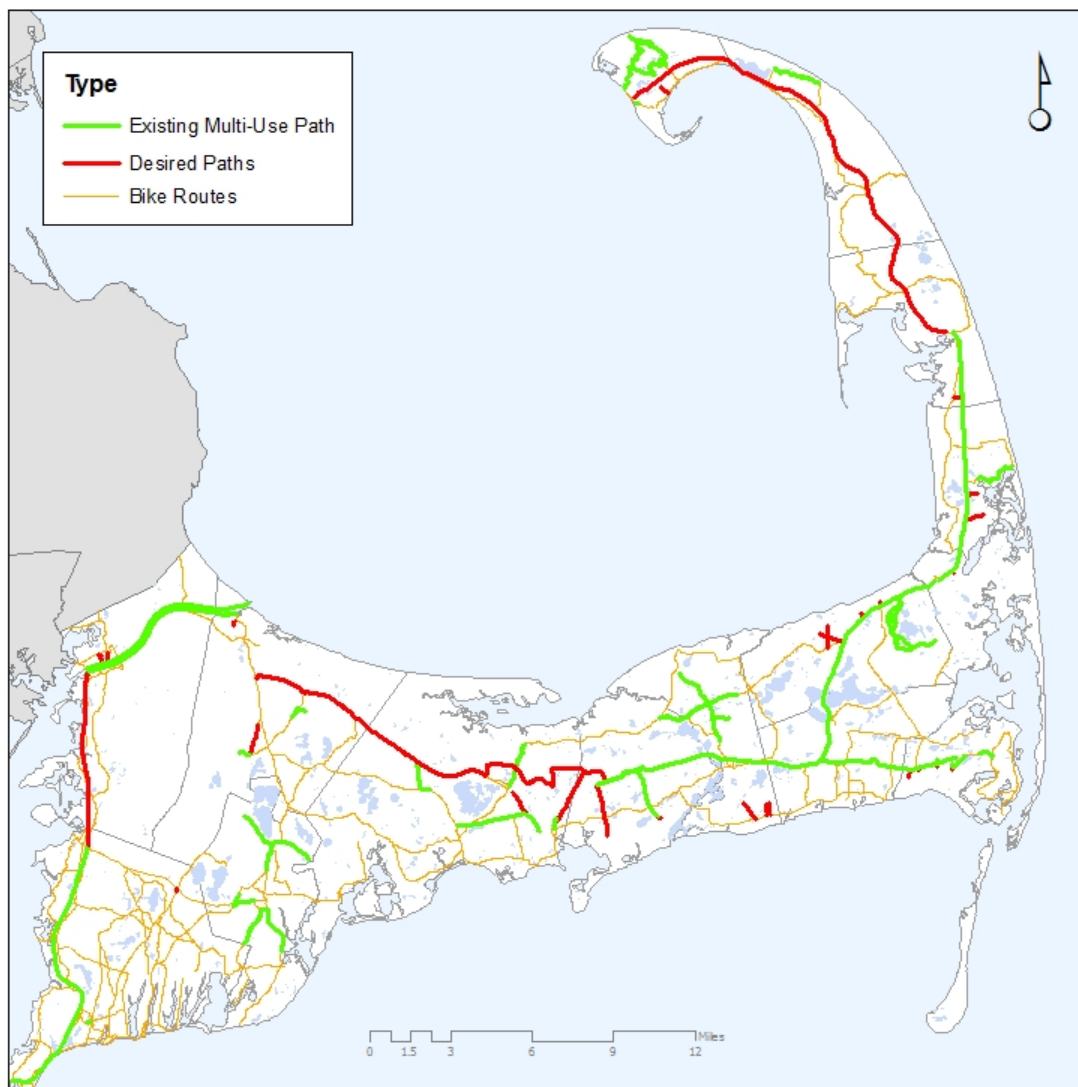


FIGURE 4. Multi-Use Paths and Routes on Cape Cod

## **Region-wide Multi-use Paths**

### **CAPE COD RAIL TRAIL**

The Cape Cod Rail Trail was constructed in the 1970s from the out of service Cape Cod Line rail right-of-way. Several additions, including bridges over Route 6 and a tunnel beneath it, have been completed in the past two decades, with more extensions planned. The Massachusetts Department of Conservation and Recreation (DCR) owns and maintains the Rail Trail.

The Rail Trail runs 26 miles from Peter Homer Park in Yarmouth to LeCount Hollow Road in Wellfleet, with a 6.2 mile “spur” running from Harwich to Chatham along the out-of-service Chatham Branch rail right-of-way. A further extension of the Rail Trail from Peter Homer Park to Mary Dunn Road in Barnstable is to is currently programmed in the TIP. Continuation of the Rail Trail to Route 132 in Barnstable as well as A further extension to the Hyannis Transportation Center are planned. A proposed eastward extension from Wellfleet to Truro and Provincetown is underway, as recommended in the 2016 Outer Cape Bicycle and Pedestrian Master Plan.





FIGURE 5. Cape Cod Rail Trail Crossing at Main Street, Harwichport



FIGURE 6. Cape Cod Rail Trail at Brackett Road, Eastham



FIGURE 7. Harwich-Chatham Rail Trail Extension at the Harwich-Chatham Town Line



FIGURE 8. End of the Harwich-Chatham Rail Trail Extension At Crowell Rd., Chatham



FIGURE 9. Bicycle Roundabout on the Cape Cod Rail Trail, Harwich

## Cape Cod National Seashore Bike Paths



## PROVINCE LANDS TRAILS AND HERRING COVE BEACH PATH

The 7.6 miles of Province Lands Trails are located at Race Point in Provincetown. They provide a path from near Route 6 to the Provincetown beaches and the Provincetown Municipal Airport. Travelers primarily use the Province Lands Trails for recreation rather than commuting. The Park Service rehabilitated/repared the path in 2014 to address safety concerns. The 0.1 miles long Herring Cove Beach Path serves as a connection between the Herring Cove Beach parking lot and Province Lands Road. It also connects to the Province Lands trails through the parking lot.



FIGURE 10. Province lands Trail at the Race Point Visitors Center, Facing West

## NAUSET TRAIL

The 1.9-mile Nauset Trail is located in Eastham at the Salt Pond Visitors Center and runs to Coast Guard Beach.



FIGURE 11. Nauset Trail from the Salt Pond Visitor's Center Looking East



FIGURE 12. Nauset Trail from Coastguard Beach Parking Lot in Eastham

## HEAD OF THE MEADOW TRAIL

The 1.9-mile Head of the Meadow Trail is located in Truro in Cape Cod National Seashore. It runs from Head of the Meadow Road to High Head Road in Pilgrim Heights. The Park Service will repair and rehabilitate the trail in 2019 and add a connector piece from Highland Road along Old King's Highway as part of the Outer Cape Bicycle and Pedestrian Master Plan.



FIGURE 13. Head of the Meadow Trail at Head of the Meadow Road, Truro

## Other Bike Paths

### CAPE COD CANAL BIKE PATHS

The Cape Cod Canal Bike Paths run along both sides of the Cape Cod Canal. The Army Corps of Engineers owns and maintains the paths as frontage roads for the Cape Cod Canal. Both sides have benches and sitting areas and are lit at night. The southern-side path is 6.5 miles long, 8 feet wide and has 2 roadway crossings. The mainland-side path is 7 miles long, 8 feet wide and has 7 roadway crossings.





FIGURE 14. Southern-Side of the Canal Bicycle Path, East of Sagamore Bridge



FIGURE 15. Mainland-Side of the Canal Bicycle Path, East of Railroad Bridge



FIGURE 16. Shining Sea Bicycle Path at Ter Huen Drive, Falmouth



FIGURE 17. Shining Sea Bicycle Path at Palmer Ave., Falmouth

### SHINING SEA BIKE PATH

The Shining Sea Bike Path, located in Falmouth, was constructed from a portion of the out-of-service Woods Hole Branch rail right-of-way. The first phase of construction, which runs from the Steamship Authority terminal in Woods Hole to the Falmouth Bus Depot on Depot Street, was completed in 1976. The bike path has been extended northward over a series of phases to its current terminus at County Road (Route 151). The trail is currently 10.6 miles long. The Cape Cod Commission completed a feasibility study in 2017 for extending the bike path into Bourne, eventually connecting to the Cape Cod Canal bike path.

## SETUCKET ROAD AND DENNIS PATHS

Several paths exist in Dennis, creating a network for bicyclists and pedestrians. The longest path runs along Old Bass River Road from just south of Bob Crowell Road. The portion south of Mayfair Street is designated as Bicycle Route 1, part of the Claire Saltonstall Bikeway. The Old Bass River Road Path is 3.1 miles long. The 3.2-mile Setucket Road Path begins in Yarmouth at Route 6A and ends west of Airline Road. The path crosses Route 134 and Old Bass River Road. The western section of path, until Mayfair Road, is also designated as Bicycle Route 1. The third path in Dennis is the 0.7-mile Old Chatham Road path between Old Bass River Road and Route 134. All of these paths are owned and maintained by the Town of Dennis except for the section of path in Yarmouth, which is owned and maintained by that town. They provide a network of bicycle transportation for residents of Dennis.



FIGURE 18. Setucket Road Path East of North Dennis Road, Looking East



FIGURE 19. Setucket Road Path East of North Dennis Road, Looking West



## NICKERSON STATE PARK TRAILS

Several bicycle paths are located within Nickerson State Park in Brewster. These paths are used for recreation, offering a scenic ride through the park. They are owned by the Massachusetts Department of Conservation and Recreation. There is a total of 6.8 miles of bicycle path, with six roadway crossings.

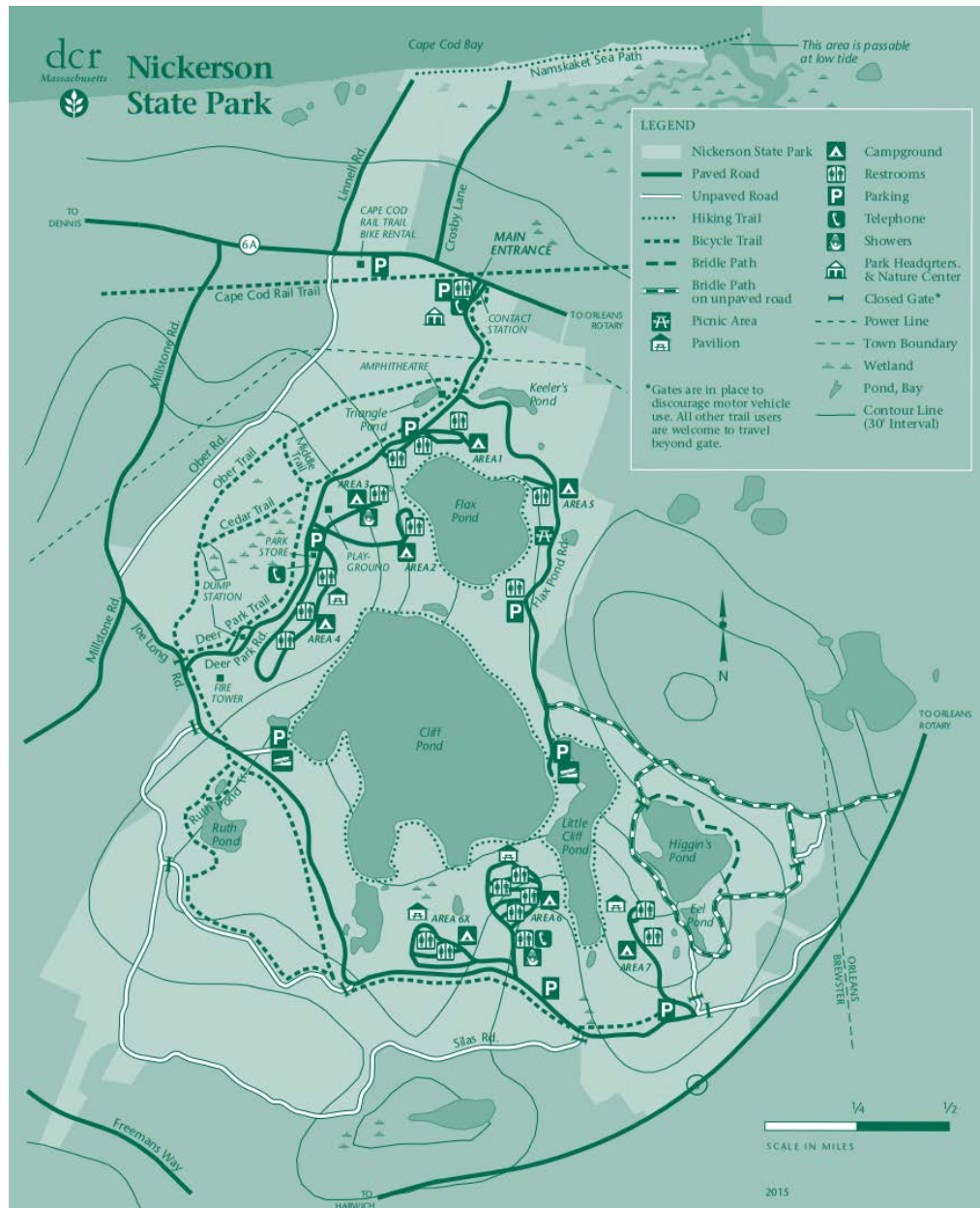


FIGURE 20. Map of Nickerson State Park Trails  
(Source: Massachusetts Department of Conservation and Recreation)

### **ROUTE 28 PATH**

The 2.5-mile Route 28 Path runs along Route 28 in Barnstable from Bearses Way to Old Stage Road. The path was constructed in 1980 by the Town of Barnstable as a safe route to the middle and high schools. However, some sections of the path have not been designed to bicycle path standards, with narrow pavement, insufficient shoulders, and inadequate roadway crossings. The path is used primarily for commuting, as it connects residences, businesses, schools and other points of interest.

### **ROUTE 130 PATH**

The 2.4 miles Route 130 Path runs along Route 130 from Heritage Memorial Park to just north of Route 28 in Mashpee. The path is owned by the town of Mashpee.



FIGURE 21. Looking North on Route 130 Bicycle Path at Lovells Lane, Mashpee



FIGURE 22. Looking South on Route 130 Bicycle Path at Lovell's Lane, Mashpee



## OLD TOWNHOUSE ROAD TRAIL

The 2 miles long Old Townhouse Road Trail runs from near Station Avenue, along Old Townhouse Road, behind the Bayberry Hills Golf Course, to Higgins Crowell Road in Yarmouth. The trail will become part of the Cape Cod Rail when the CCRT is extended from Peter Homer Park to Barnstable.



FIGURE 23. Old Townhouse Road Path  
East of West Yarmouth Rd., Yarmouth



FIGURE 24. Old Townhouse Road Path  
West of West Yarmouth Rd.,  
Yarmouth



FIGURE 25. Old Townhouse Road Path  
at the Bayberry Golf Course in  
Yarmouth



FIGURE 26. Old Stage Road Path at the  
Service Road in Barnstable

## OLD STAGE ROAD PATH

The 1.9 miles Old Stage Road Path begins at Route 149 in Barnstable, continues along the Service Road, and then turns down Old Stage Road. The path ends at Oak Street, where travelers can continue by sidewalk to Route 28 and Centerville shopping areas. The path was constructed in the



early 1980s and is owned by the Town of Barnstable. It is used for both recreation and commuting, connecting West Barnstable and Centerville.

### **FOREST ROAD PATH**

The 1.4 miles Forest Road Path was built alongside Forest Road in 2006. It runs from Old Townhouse Road to Winslow Gray Road in Yarmouth. Continuing south on Forest Road, users can reach South Yarmouth and Route 28. Although terminating at Old Townhouse Road, the Forest Road Path does not directly connect with the trail there.



FIGURE 27. Forest Road Path, Looking North



FIGURE 28. Forest Road Path, Looking South

### **ROUTE 151 PATH**

The 1.1 miles Route 151 Path runs along Route 151 from Mashpee Commons to Old Barnstable Road in Mashpee. At Old Barnstable Road, 2 forks turn south to access Mashpee High School. A third fork turns north and provides a connection to the Golf Club at Southport. The Route 151 Path is owned by the Town of Mashpee.

TABLE 3. Bicycle Path Mileage by Path

PATH NAME		LENGTH IN MILES	WIDTH IN FEET
Cape Cod Canal Bike Path	Total Mileage both Sides	13.6	8
Cape Cod Rail Trail	Main Path	26	8.5 / 10
Cape Cod Rail Trail	Harwich-Chatham Ext.	6.9	8.5
Downtown Falmouth Path		0.2	-
Forest Road Path		1.4	8.5
Forestdale School Path		0.4	10
Head of the Meadow Trail (with 2020 rehab)		1.9	8.5 -10
Hyannis Transportation Center Path		0.4	-
Nauset Trail		1.9	8
Nickerson State Park Trails		6.8	-
Old Stage Road Path		1.9	-
Old Townhouse Road Path		2.0	8
Provincelands Trail		7.6	8-10
Herring Cove Beach Path		0.1	8
Route 130 Path		2.4	-
Route 151 Path		1.3	-
Route 28 Path		2.6	8
Setucket Road and Dennis Paths		7.0	8.5
Shining Sea Bikeway		10.6	8.5

#### HYANNIS TRANSPORTATION CENTER PATH

The 0.4 Hyannis Transportation Center Path runs from Route 28 in Barnstable to Main Street Hyannis. The trail was built during the construction of the Hyannis Transportation Center in 2002.

#### FORESTDALE SCHOOL PATH

The 0.4 Forestdale School Path is located in Sandwich and connects Route 130 to the Forestdale School. Given that one can walk or bicycle from the nearby neighborhoods, the shared-use path serves the needs of students traveling to and from the school.

## DOWNTOWN FALMOUTH PATH

The Downtown Falmouth Path is located on Hamlin Street in Falmouth, between Dillingham Avenue and Katherine Lee Bates Road. The bicycle path is owned by the Town of Falmouth. As a connection to downtown Falmouth, the path is used to access town hall, the library, and businesses. The Downtown Falmouth Path is 0.2 miles long and has no roadway crossings.

## Bicycle Lanes

MassDOT upgraded the paved shoulders on Route 6 in Truro and Wellfleet to bike lanes in 2017 by installing bike lane symbols and signage and lane striping. The 2017 Outer Cape Bicycle and Pedestrian Master Plan recommended conducting a feasibility study of extension into the four-lane section in North Truro and Provincetown. The National Park Service installed a bike lane on Province Lands Road Bradford Street and Herring Cove beach in 2011.

## Bicycle Routes

A bicycle route is any road, path, or trail that has been designated for bicycle use. In many cases, these are side streets with a low volume of traffic, or roads with wide shoulders. Many bicycle routes exist on Cape Cod, some of which are better signed than others. They allow bicycle users a wide network of travel across Cape Cod.

## CLAIRE SALTONSTALL BIKEWAY

In 1978 the Massachusetts General Court established the Claire Saltonstall Memorial Bikeway (also known as “Mass Bike Route 1” and the “Boston to Cape Cod Bikeway”) as a memorial to Claire Saltonstall, daughter of Senator William Saltonstall, who died in a bicycle accident in 1974. The bike route consists of a series of interconnected on-road segments and multi-use paths beginning in Boston and ending in Provincetown. A secondary leg extends from Bourne to Falmouth. A green oval route sign marks the route location and guides bicyclists., although signs are missing, and the route is difficult to follow without a map. The Cape Cod section of the Claire Saltonstall Bikeway is 98.3 miles in length. The Bourne to Provincetown portion is about 75.4 miles long, while the Bourne to Woods Hole portion is 22.9 miles long. Overall, the Claire Saltonstall Bikeway is about 165 miles long.



FIGURE 29. Signage on State Bicycle Route 1



FIGURE 30. Claire Saltonstall Bikeway – Current Routing

In February of 2015 the Cape Cod Commission published “Claire Saltonstall Memorial Bikeway: Cape Cod Segment –Recommended Route Revisions.” The report is a result of collaboration between Commission staff and bikeway committee members in the affected towns.

The report includes recommendations to revise the route to create more comfortable conditions for bicyclists (e.g., lower volume roads, shared use paths). With the construction of new multi-use paths, particularly Cape Cod Rail Trail extensions, on-road segments, the study recommends re-routing on-road segments to off-road paths where available. The study includes a suggested phasing of the re-routing to allow time for the new path construction. The report is available online at:

[www.capecodcommission.org/bikeped](http://www.capecodcommission.org/bikeped)

The following figures show details of the proposed realignment for the various segments of the route. The realignment maximizes use of shared-use paths where available.

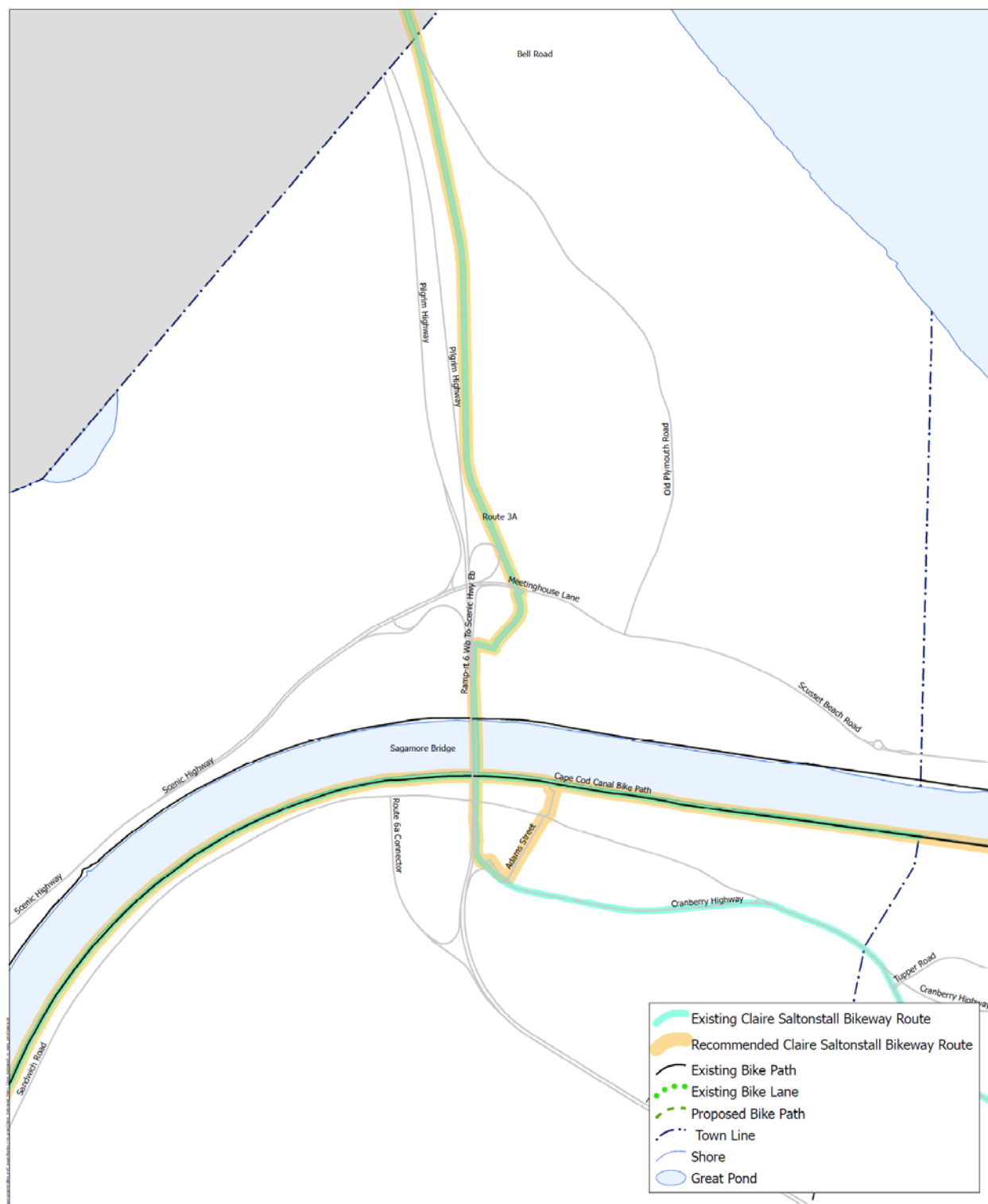


FIGURE 31. Recommended Saltonstall Route (Bourne)

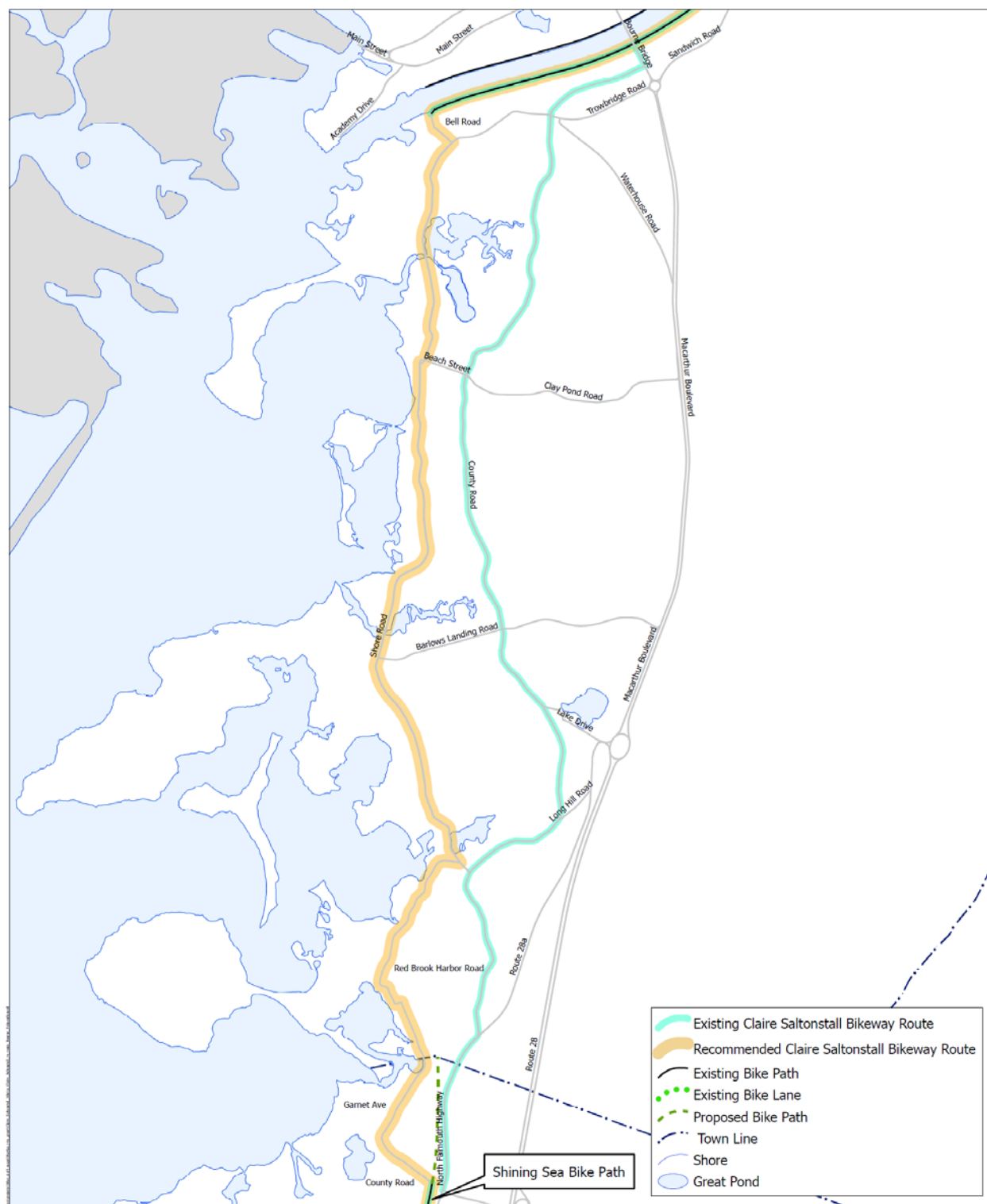


FIGURE 32. Recommended Saltonstall Route (Bourne-Falmouth)





FIGURE 33. Recommended Saltonstall Route (Bourne-Sandwich-Barnstable)



FIGURE 34. Recommended Saltonstall Route (Barnstable-Yarmouth-Dennis)





FIGURE 35. Recommended Saltonstall Route (Dennis-Harwich-Brewster-Orleans-Eastham)



FIGURE 36. Recommended Saltonstall Route (Wellfleet)

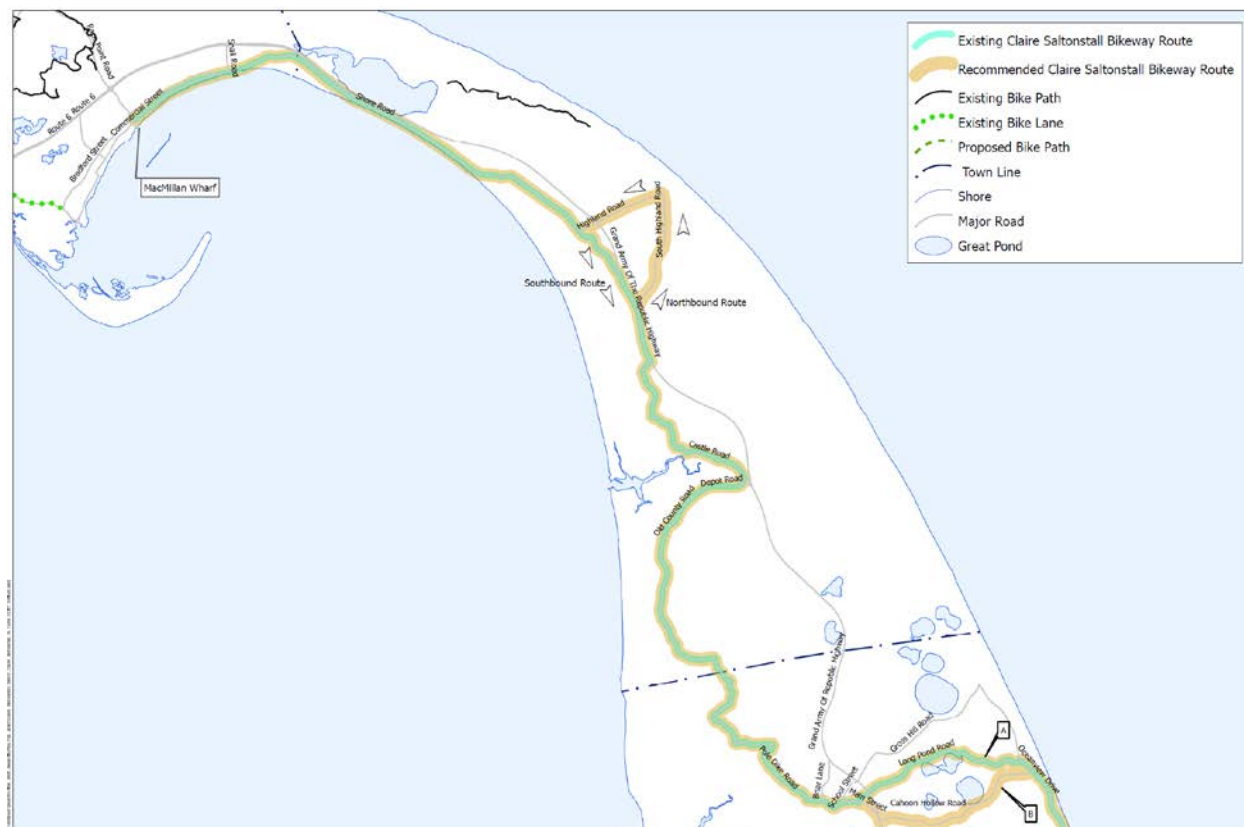


FIGURE 37. Recommended Saltonstall Route (Wellfleet-Truro-Provincetown)

## Other State Bicycle Routes

MassGIS has also identified other bicycle routes throughout Cape Cod. Some examples are Buck Island Road in Yarmouth, Great Western Road in Dennis and Harwich, or Great Neck Road in. The Cape Cod Commission and AmeriCorps performed a survey of many of these roads in 2006. According to the survey, many of these roads are unsigned and some have sharp turns, no shoulders, or high traffic volumes. Evaluating existing bicycle routes, maintaining proper signage, and identifying possible new routes will help to encourage more bicycle use on Cape Cod, both commuter and recreational.

The Town of Falmouth has designated many of their roads to be bicycle routes. Some examples are Gifford Street, Sippewisset Road, Route 151, and Menauhant Road. According to a survey conducted by the Cape Cod Commission and AmeriCorps performed in 2006, many of these routes are signed and have sidewalks. In total, there are 101.8 miles of roadway in Falmouth designated as bicycle routes.



FIGURE 38. Route 28 North of the Davis Straits Intersection, a Designated Bicycle Route in Falmouth

### LOW VOLUME ROADS

Bicyclists and pedestrians can utilize low volume roads with minimal automobile conflicts. Cape Cod has 462.8 miles of major roads with summer average daily volumes (ADT) of 5,000 vehicles per day or less, and 91.2 miles of major roads with 1,000 vehicles per day or less. For reference, an ADT of 5,000 is equivalent to about one vehicle every seven seconds during daylight hours. An ADT of 1,000 is equivalent to about 1 vehicle every 35 seconds during daylight hours. The average daily volumes include the peak volumes. The actual volumes during most of the year would be less than the summer. Cape Cod also has about 1,803.4 miles of local paved roads that are suitable for safe bicycle and pedestrian traffic. Low volume roads are an important piece of a bicycle network, as many bicyclists are comfortable using them without a separated bicycle accommodation. Trips usually begin or end on side streets or in low traffic residential neighborhoods where they provide readily available route connections.

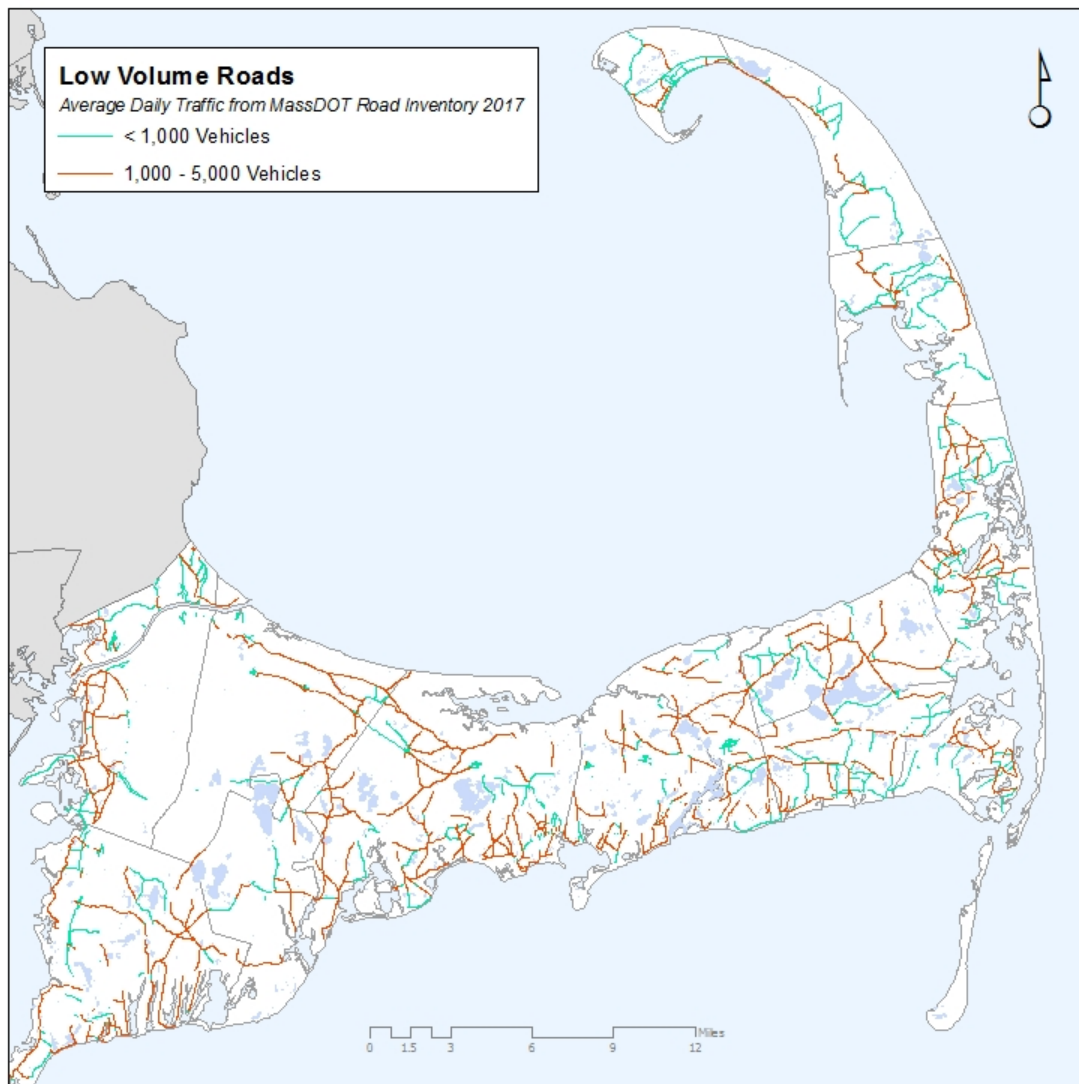


FIGURE 39. Low Volume Roads

## Sidewalk Network

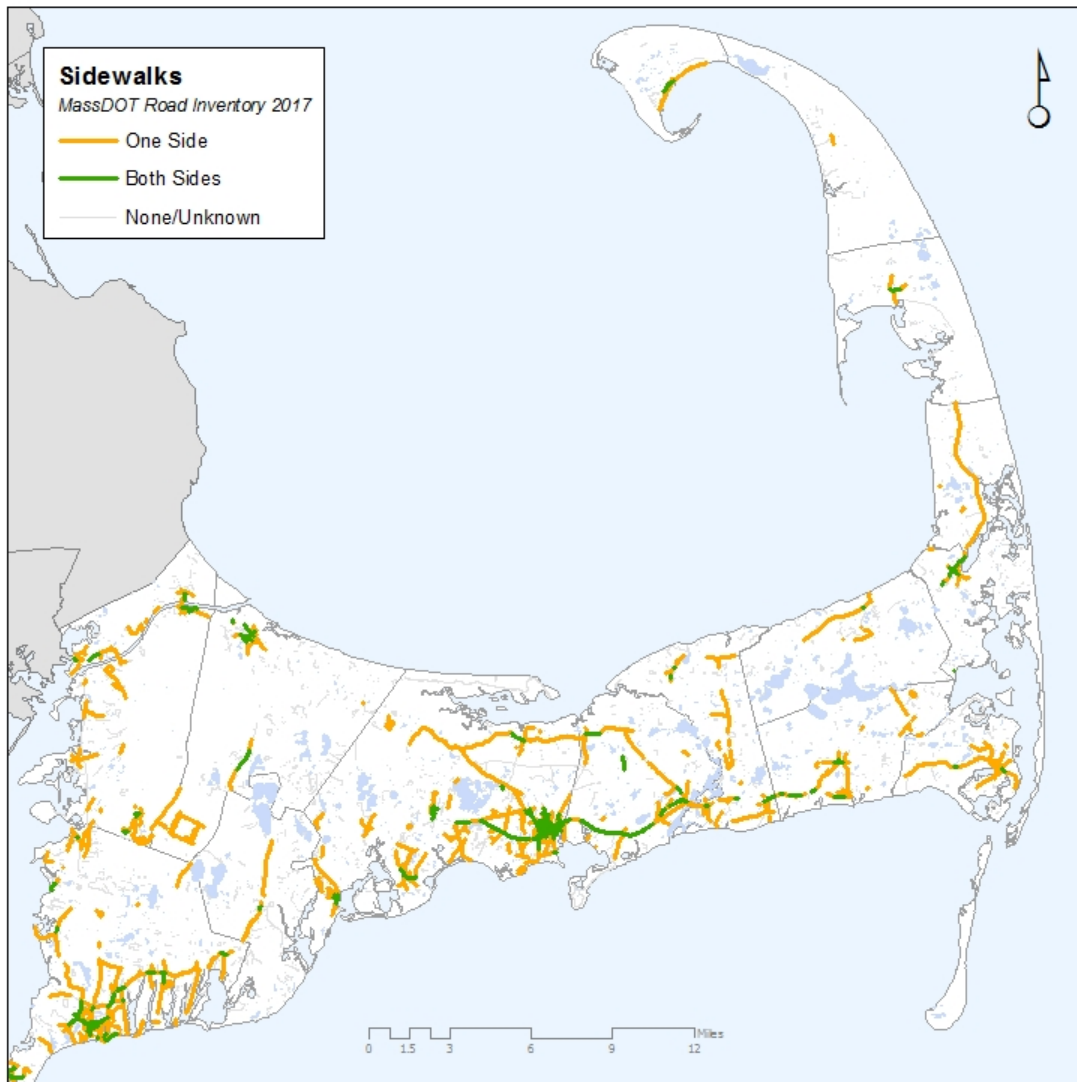


FIGURE 40. Sidewalk Network

Sidewalks are paved surfaces, usually adjacent to roadways, which are designed primarily for pedestrian usage. Sidewalks are typically 4 to 6 feet wide, made with slabs of concrete, paved asphalt, bricks, or other hard substances. The Americans with Disabilities Act requires sidewalk curb cuts to be large enough and shallow enough for wheelchair usage. Telephone poles, road signs, and other architectural barriers must also be removed in order to create an unobstructed path for walking. In Massachusetts, bicyclists may ride on sidewalks outside business districts unless otherwise prohibited by local ordinances.



According to the 2017 Massachusetts Statewide Roadway Inventory File, there are 230 miles of sidewalk located on Cape Cod. In addition, 39.10 miles of road have sidewalks on either side. These roads are concentrated primarily in Hyannis and downtown Falmouth. Of all paved roadways on Cape Cod, 5.1% have a sidewalk on at least one side. The average sidewalk width on Cape Cod by mileage is 4.4 feet.

All of these figures illustrate pedestrian issues that must be addressed by any review of bicycle and pedestrian transportation. Over 90% of Cape Cod roadways do not have sidewalks. While many of these streets are low volume and residential, some are not and do warrant sidewalks. On a street without sidewalks, pedestrians must walk in the shoulders or on private property. This is not only less safe, but it restricts access for the elderly and disabled. Moreover, some sidewalks on Cape Cod have architectural barriers, such as telephone poles, located within the sidewalk. Obstructions like these make sidewalk navigation more difficult, especially for the disabled. Expanding the existing sidewalk network and correcting improperly designed sidewalks will help to encourage pedestrian usage in, around, and between business and population centers.

The sidewalk network also includes crosswalks. Crosswalks provide a safe means for pedestrians and other sidewalk users to cross roadways. All crosswalks are marked on the roadway surface by white paint. Generally, crosswalks located on lower volume roads have no traffic control devices, or a sign telling motorists to yield to pedestrians. However, many crosswalks have crossing signals that stop traffic, allow pedestrians to cross, and warn pedestrians when traffic is about to resume. Typically, crossing signals are located with traffic signals at roadway intersections. However, there are four pedestrian signals on Cape Cod that are not located at a roadway intersection. Ensuring that crosswalks are located at high pedestrian areas throughout Cape Cod will help to improve safety as well as access. Access can also be improved by ensuring that crosswalks accommodate all users, including the elderly and disabled. Properly designed curb cuts that are usable by wheelchairs, tones at crosswalk signals for the blind, and other amenities can significantly improve sidewalk access for the disabled.

## **Unpaved Paths**

In addition to paved sidewalks and multi-use paths, unpaved footpaths and trails provide pedestrian access and connections to destinations. While not formal/standard pedestrian accommodations, they facilitate pedestrian travel separated from motor vehicle space. In residential neighborhoods and rural locations, unpaved paths might be preferred over concrete or asphalt surfaces as more in keeping with the community character. Trail networks in Cape Cod National Seashore and in state and local conservation areas are used by local residents and visitors

as a way to enjoy a quiet travel experience through scenic and quiet coastal and woodland landscaped and connect with nature.

## **Bicycle and Pedestrian Amenities**

Beyond bicycle and pedestrian infrastructure, there are various amenities that address the needs of the traveler. Employers and businesses almost always have enough automobile parking. The same does not always hold true for bicycles. Bicycle racks allow the traveler to securely park their property without fearing that it will be stolen or damaged. Water fountains, vending machines or nearby cafes provide the traveler with nourishment after their ride or walk. Public restrooms are also useful to both pedestrians and bicyclists. Showers and locker facilities allow employees to change into clean clothes. All of these amenities help to encourage non-motorized transportation.

There are many amenities available to bicyclists and pedestrians on Cape Cod. The Town of Provincetown installed two public bicycle repair stations in 2018, where bicyclists can fill their tires or make a simple repair. The Hyannis Transportation Center has bicycle racks, public restrooms, water fountains, vending machines and other user amenities. In addition, the Cape Cod Regional Transit Authority (CCRTA) offers bicycle racks with space for two bicycles on each CCRTA bus. Bicycle racks, restrooms, food, and other amenities are also available at the Exit 6 Rest Area near the Barnstable Park-and-Ride Lot. The Steamship Authority Piers in Hyannis and Woods Hole offer restrooms and vending machines to customers who arrive by bicycle. Moreover, some employers offer bicycle and pedestrian amenities to their employees. According to the Massachusetts State Bicycle Plan, all such amenities address the “destination barriers” that bicyclists and pedestrians perceive, such as not being able to safely park their bicycle, showing up to work sweaty, or arriving at their workplace hungry and thirsty. By making non-motorized travel more attractive to potential users, more people will be inclined to ride a bicycle and walk to work.

## **Bicycle and Pedestrian Facility Accessibility and Mobility**

Not everyone can ride a bicycle or walk as their primary mode of transportation. Users must live relatively close to where they work and shop in order to ensure a reasonable travel time. The low density of Cape Cod development is in this way not conducive to bicycle travel. Moreover, a certain level of fitness is necessary to deal with the physical exertion. On Cape Cod, where many residents are elderly, bicycling or walking may not be practical for some travelers. Despite these barriers, there are many potential users who can be targeted and encouraged to travel by bicycling or walking for its positive environmental, physical, and economic benefits.

Bicycle paths and routes can be made more accessible by ensuring that there are adequate entry points, safe roadway crossings, and proper signage. There is a tradeoff between entry points and roadway crossings, since roadways are often the place where bicyclists enter a bicycle path. As the number of entry points increase, so do the number of roadways bicyclists must cross in order to travel the path. Most Cape Cod bicycle path-roadway crossings have yellow stanchions or gates

that encourage bicyclists to stop and watch for vehicles before crossing. Two roadway crossings of the Cape Cod Rail Trail in Harwich and Brewster have signals which warn oncoming vehicles when bicyclists or pedestrians are approaching the intersection. Signage is also important to accessibility, since it directs users to and along the path. Posted maps, street signs, and signs listing local points of interest also help to direct travelers to their destinations. By implementing safety and signage measures such as these, bicycle and pedestrian facilities can become more accessible to both first time and frequent users.



FIGURE 41. West Yarmouth Road crossing of the Old Townhouse Road Trail



FIGURE 42. Meetinghouse Road crossing of the Harwich-Chatham Extension of the Cape Cod Rail Trail

Because bicycles are small and lightweight, they are portable and easy to transfer from mode to mode. Bus services, such as the CCRTA, Plymouth and Brockton, and Peter Pan / Bonanza Bus Lines, can accommodate cyclists with racks and storage areas. The Steamship Authority and other ferry services allow passengers to bring their bicycles for a fee. Special reservations can also be made with air carriers in order to transport bicycles. For this reason, bicycle transportation can help to connect users to other modes of transportation.

Alternative bicycle routes Two of the region's primary travel corridors, Route 6A and Route 28 are popular with bicyclists for their directness and convenience, but they lack bicycle accommodations and are hazardous for bicycling due to high traffic volumes and speeds and limited space. Providing bicycle facilities on these roads is challenging and infeasible in some locations. Route 6A is a state-designated Scenic Byway with a narrow right of way with no additional space available. Route 28 has sufficient right of way in most areas but providing accommodations for bicycling requires significant analysis and funding and will take years. Bicyclists can avoid using the two corridors (and other busy roads as well) by choosing adjacent roads and creating alternate routes. The goal of establishing these routes is to provide for the "best" bicycle travel within, among, and through the attractive areas of the Cape while avoiding narrow and busy roads.



Town planning officials and concerned citizens are invited to comment and provide suggestions on specific routing. The mid-term goal is to provide online maps and on-road signage to inform the public (both to help cyclists with way-finding and to alert motorists of potential bicyclists). Longer-term, those segments of the routes that pose the greatest difficulty in safely biking then will be considered for improvements or for the development of other alternatives. Cape Cod Commission staff developed a proposal for two “alternative” regional routes: : a bayside bike route complementary to Route 6A connecting the Cape Cod Canal in Bourne to Rock Harbor Road in Orleans (the so-called “Route 6B”); and, a Southside bike route complementary to Route 28 connecting Woods Hole in Falmouth to Chatham Light (the so-called “Route 28B”). Route 6B is presented below. “Route 28B” is discussed below in the Recent Studies section.

### **“Route 6B” – Northside Bicycle Route**

The following figure shows a potential on-road bicycle route from the Cape Cod Canal area in Sandwich to the area including the Eastham Rotary and Rock Harbor at the Orleans/Eastham town line. Some non-roadway alternatives (such as the Cape Cod Canal multi-use path are not shown). The goal of establishing the Northside Route is to provide for the "best" bicycle travel within, among, and through the areas north of Route 6 in the towns from Sandwich to Orleans - and to generally avoid the narrow and busy Route 6A.

This alternative provides direct access to Route 6A and does not require cyclists to travel more than about one and a half times the distance that would be traveled if the cyclist stayed on Route 6A. Additionally, the alternate route still provides a showcase for the scenic and historic qualities of the district.

This figure was developed as part of the Route 6A Corridor Management Plan update, released by the Commission in 2010. The maps indicate useful alternatives to Route 6A as well as connector routes. The sections of Route 6A identified in red indicate road segments where no viable alternative exists.

FIGURE 43. Route "6B" logo



Town-by-town maps showing the main “Route 6B” route are shown in subsequent figures.

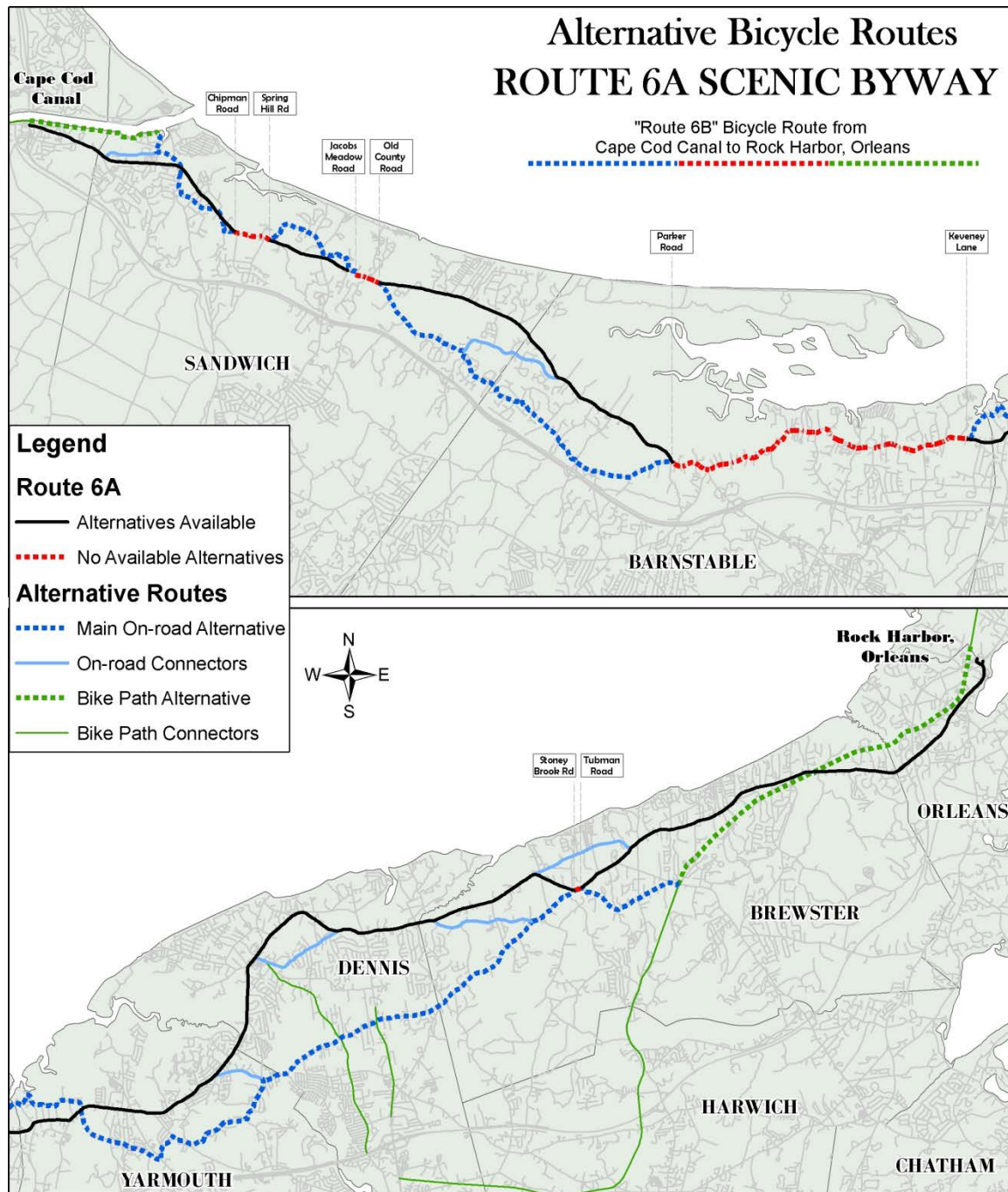


FIGURE 44. Route "6B" – Bayside Bicycle Route

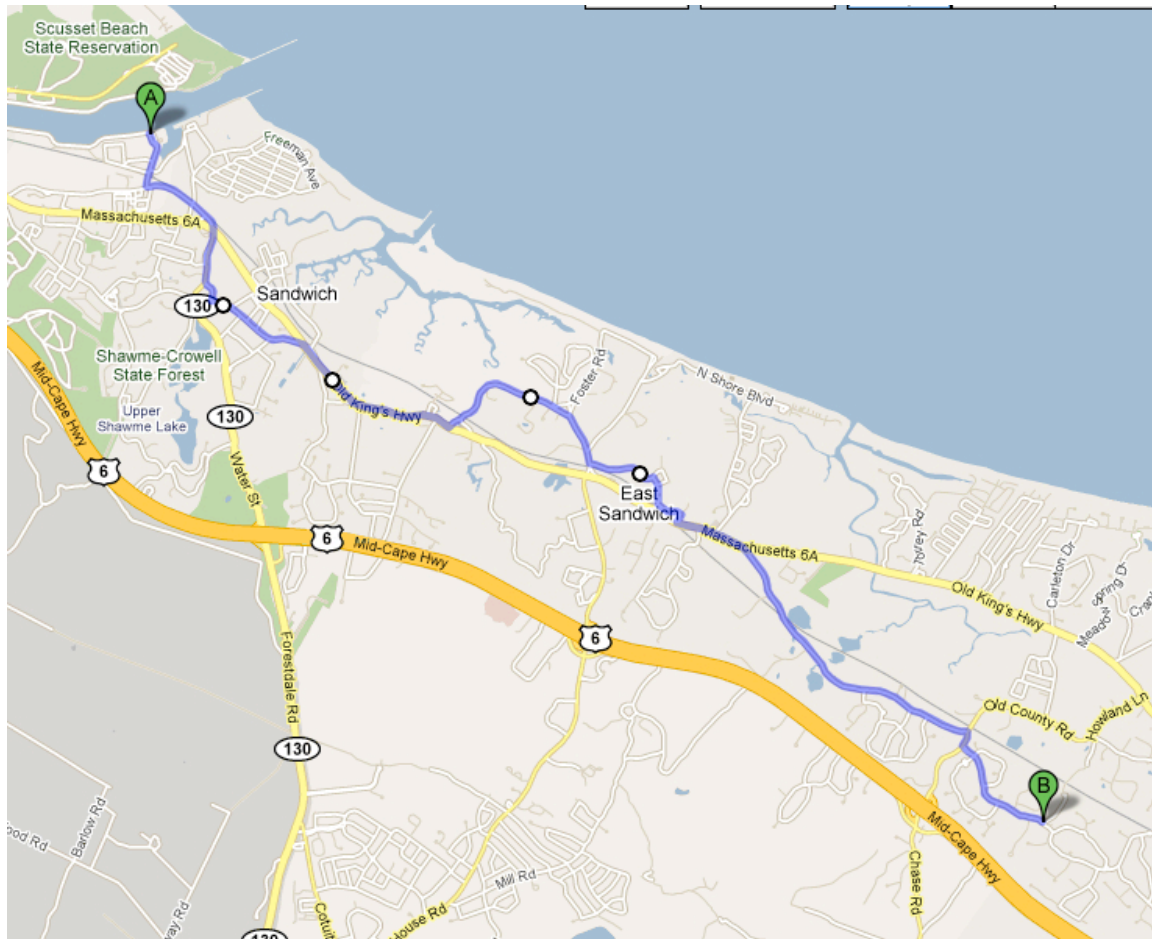


FIGURE 45. Potential Route "6B" in Sandwich  
 (Source: Cape Cod Commission, Google Maps)

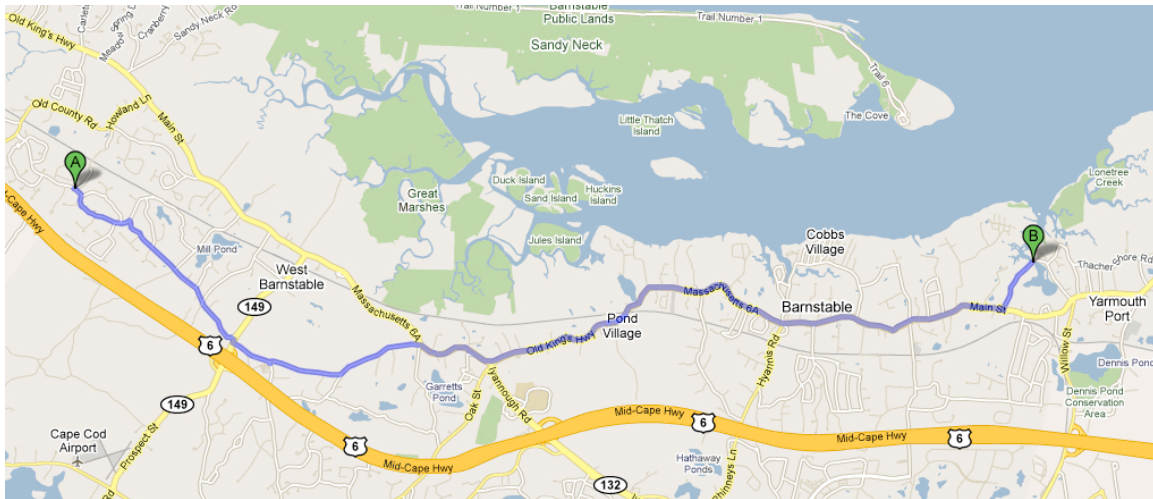


FIGURE 46. Potential Route "6B" in Barnstable  
(Source: Cape Cod Commission, Google Maps)

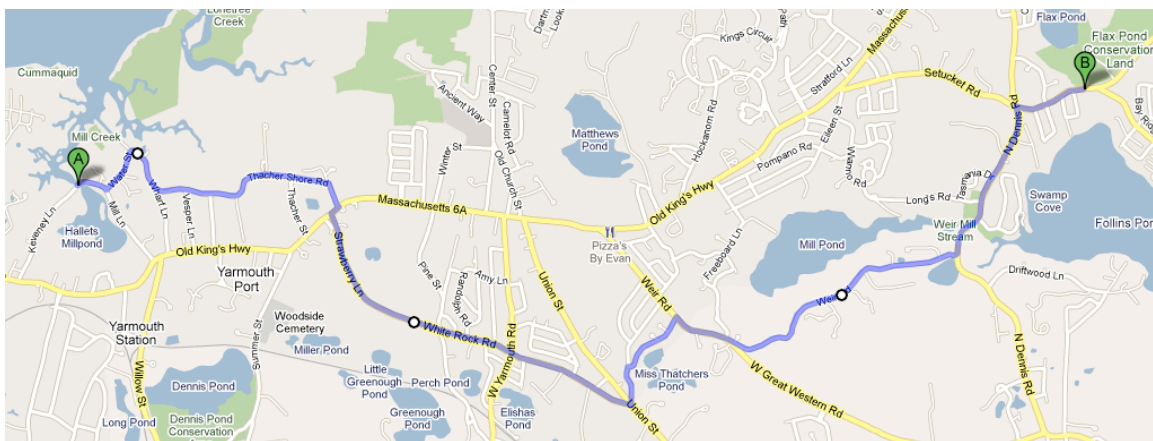


FIGURE 47. Potential Route "6B" in Yarmouth  
(Source: Cape Cod Commission, Google Maps)



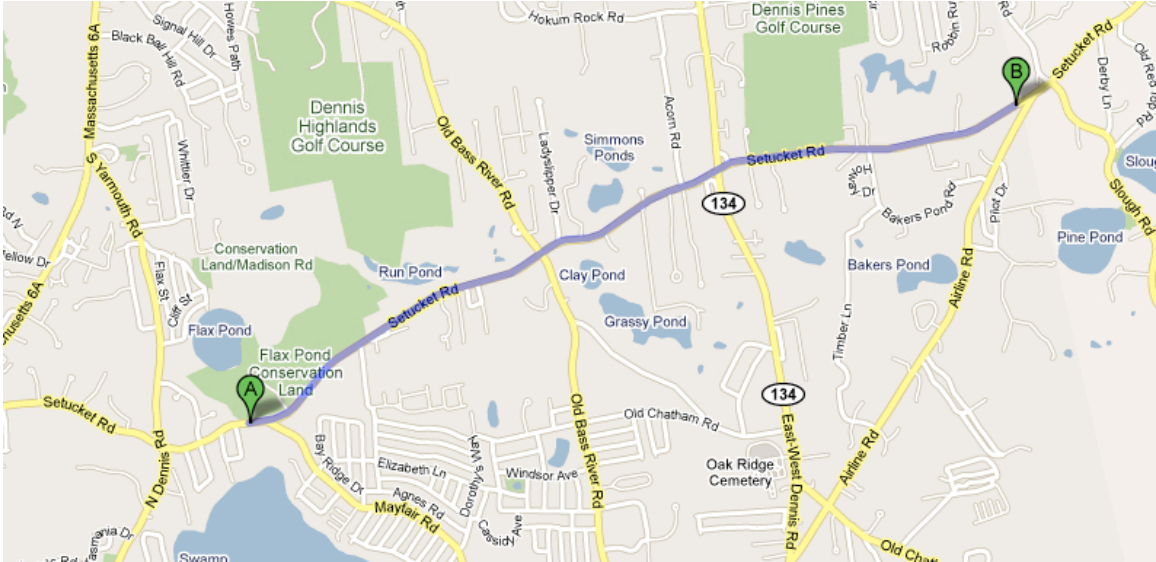


FIGURE 48. Potential Route "6B" in Dennis  
(Source: Cape Cod Commission, Google Maps)

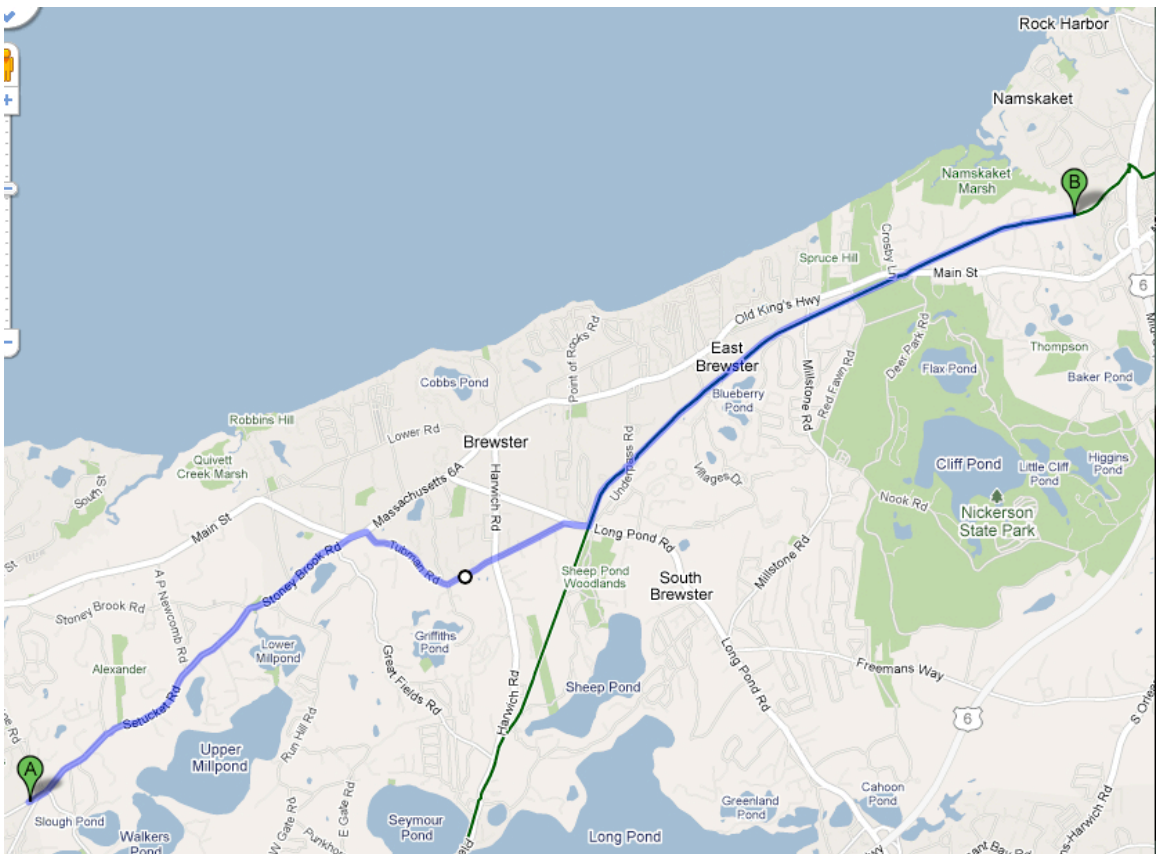


FIGURE 49. Potential Route "6B" in Brewster  
(Source: Cape Cod Commission, Google Maps)

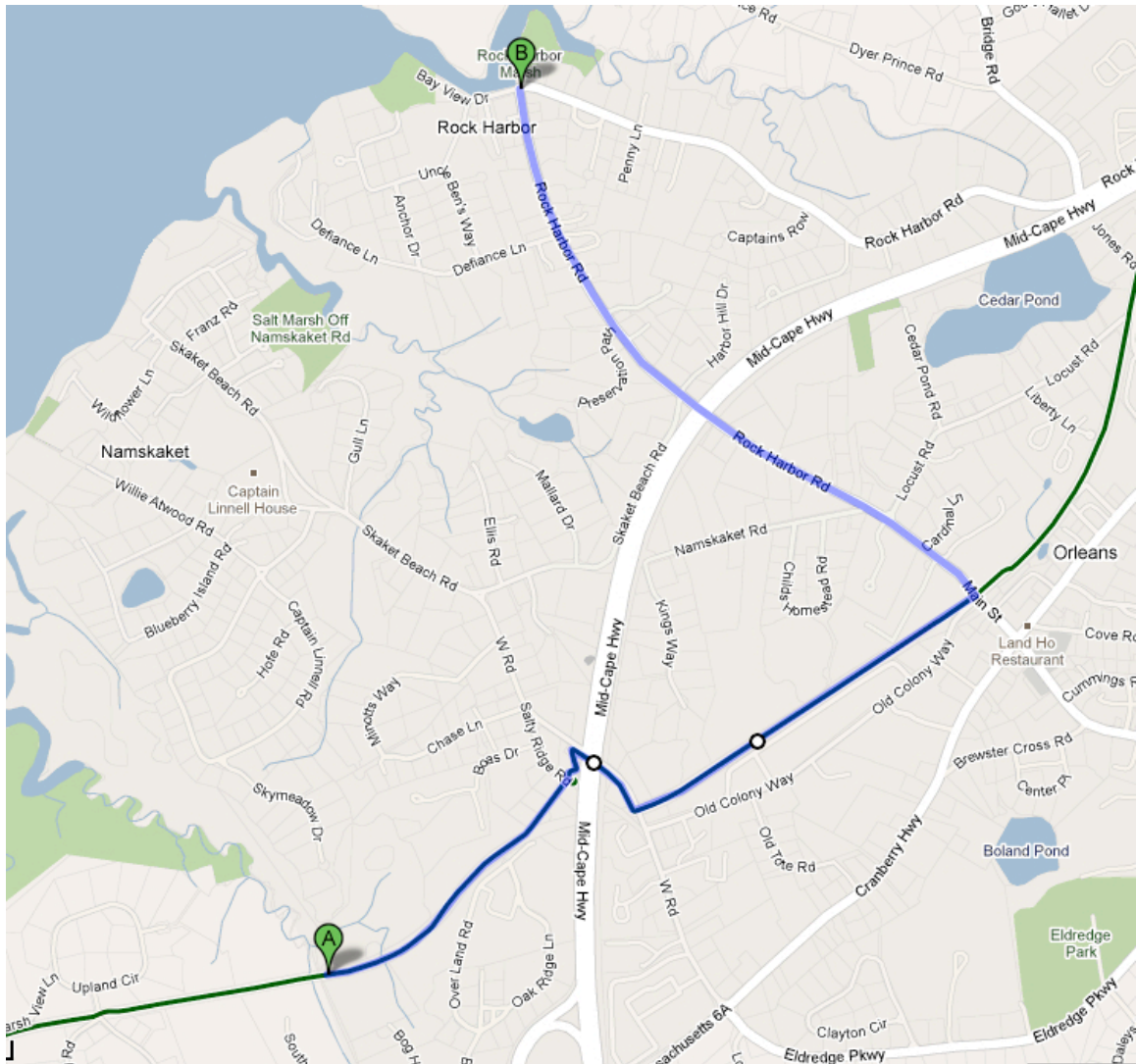


FIGURE 50. Potential Route "6B" in Orleans  
(Source: Cape Cod Commission, Google Maps)



## RECENT & ONGOING BICYCLE/PEDESTRIAN PLANNING EFFORTS

This section summarizes recent and ongoing bicycle & pedestrian studies and planning efforts underway by the Cape Cod Commission and/or Cape Cod towns. More information about these studies as well as links to previous studies/plans is available for many of these efforts at:

[www.capecodcommission.org/bikeped](http://www.capecodcommission.org/bikeped)

### Route 6 Truro and Provincetown Bicycle Lane Extension Study

This study presents alternatives for accommodating bicycles on the four-lane section of Route 6 between North Truro and Provincetown as an interim step until full implementation of the Outer Cape Bicycle and Pedestrian Master Plan, which recommends a separated multi-use path adjacent to Route 6.

### Route 28 Critical Locations bicycling network connectivity

This study provides alternative route recommendations for bicyclists to avoid travel on Route 28 . A description and maps of the recommended route follow below.

#### “ROUTE 28B” – SOUTHSIDE BICYCLE ROUTE

The following figures show a potential on-road bicycle route from the Woods Hole in Falmouth to Chatham Light. The goal of establishing the Southside Route is to provide for the "best" bicycle travel within, among, and through the areas south of Route 6 in the towns from Falmouth to Chatham - and to generally avoid the narrow and busy Route 28.

This alternative provides direct access to Route 28 and does not require cyclists to travel more than about one and a half times the distance that would be traveled if the cyclist stayed on Route 28. Additionally, the alternate route still provides a showcase for the scenic and historic qualities of the area.



FIGURE 51. Route "28B" logo

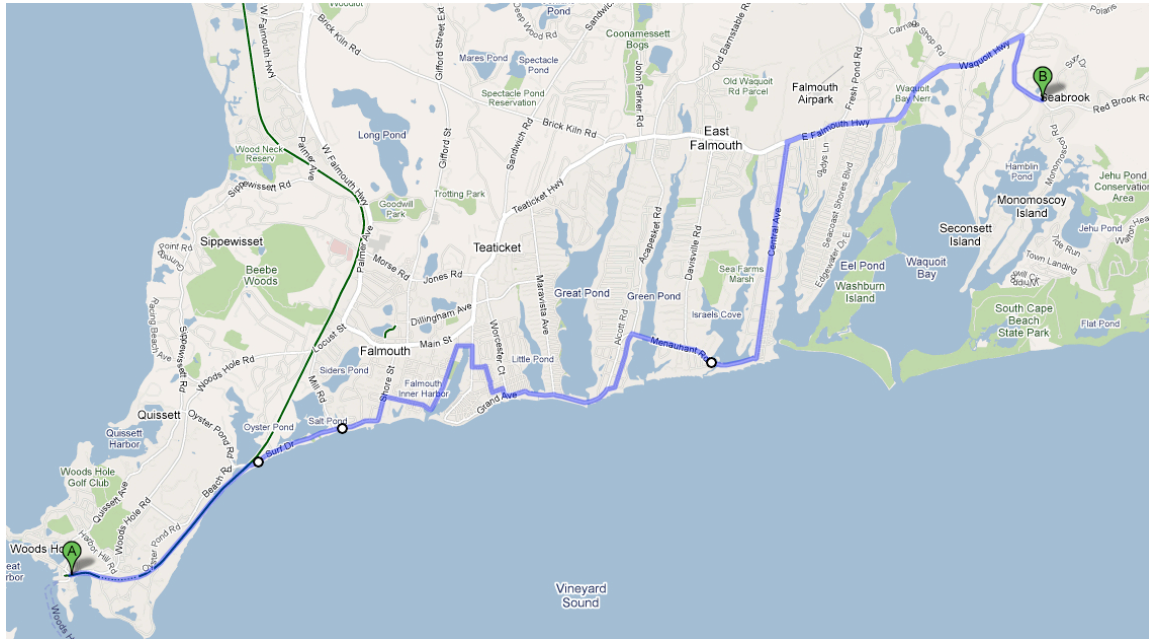


FIGURE 52. Potential Route "28B" in Falmouth  
 (Source: Cape Cod Commission, Google Maps)

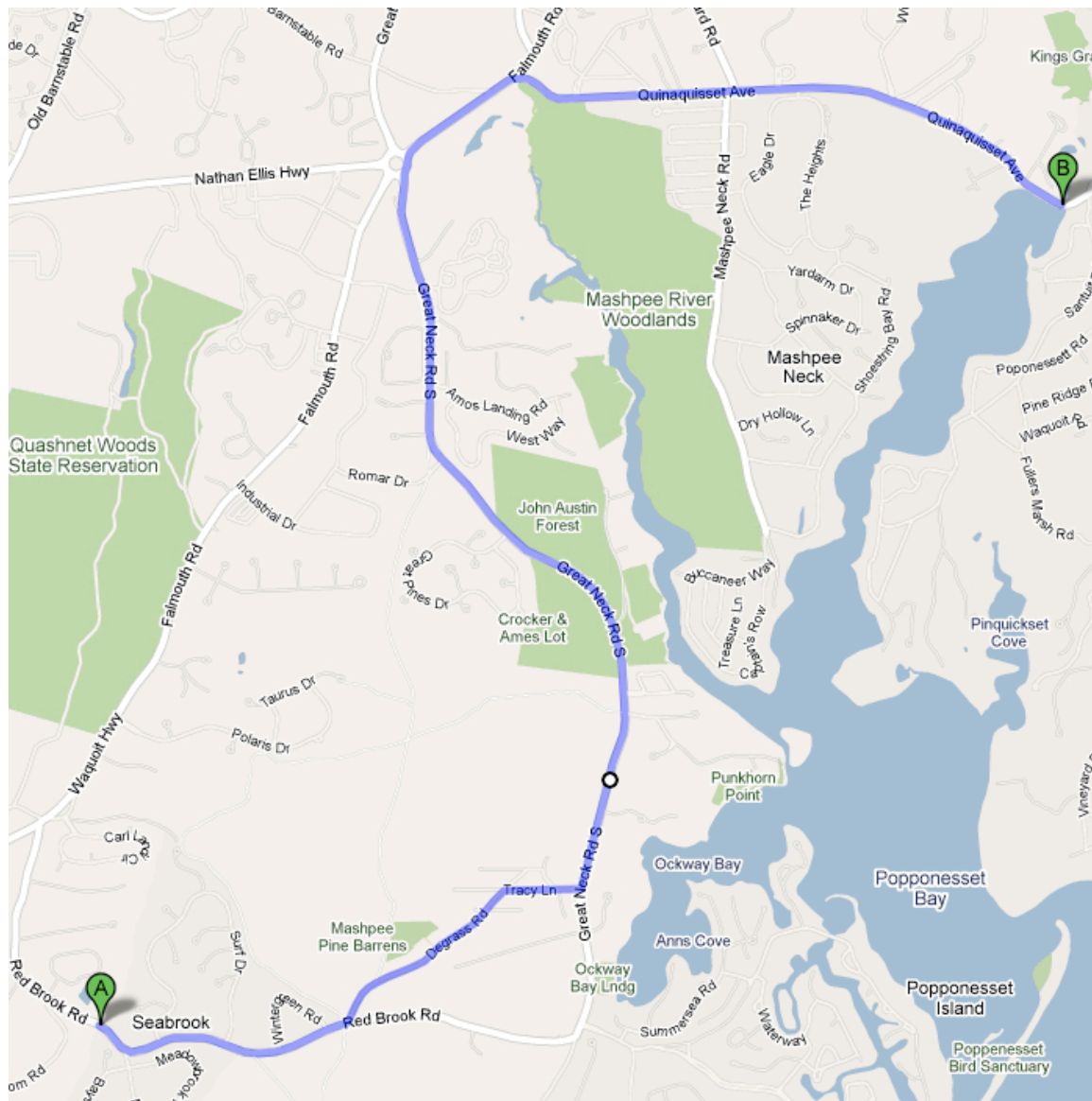


FIGURE 53. Potential Route "28B" in Mashpee  
 (Source: Cape Cod Commission, Google Maps)

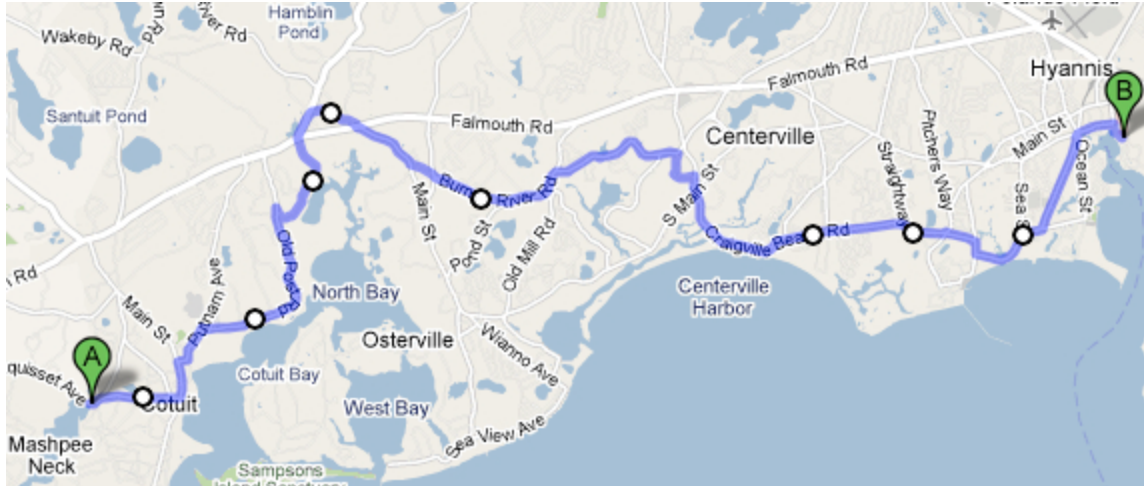


FIGURE 54. Potential Route "28B" in Barnstable  
(Source: Cape Cod Commission, Google Maps)

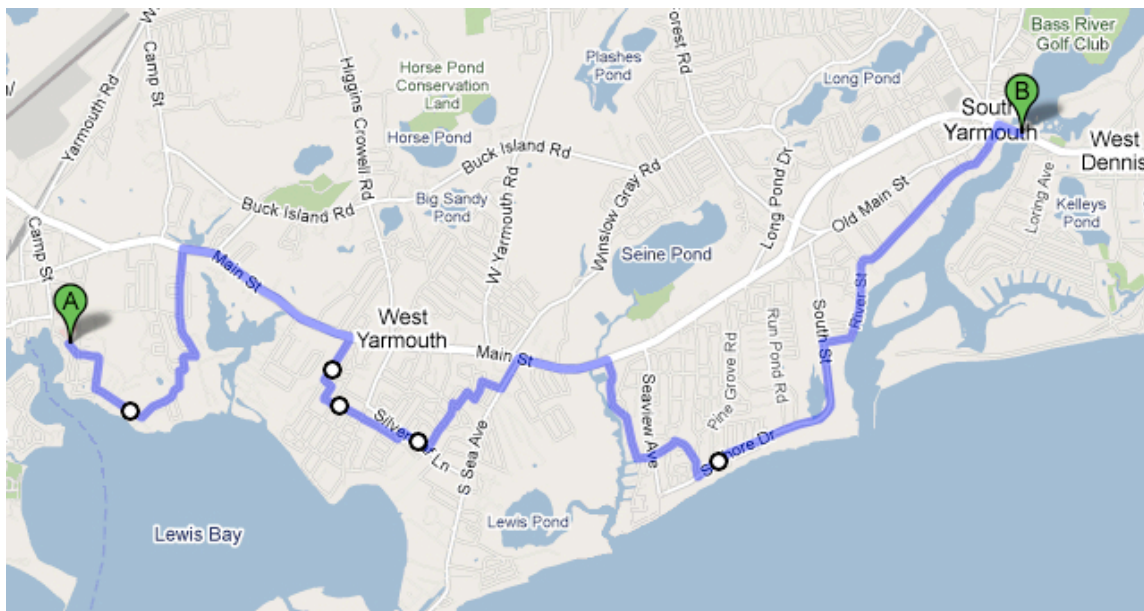


FIGURE 55. Potential Route "28B" in Yarmouth  
(Source: Cape Cod Commission, Google Maps)



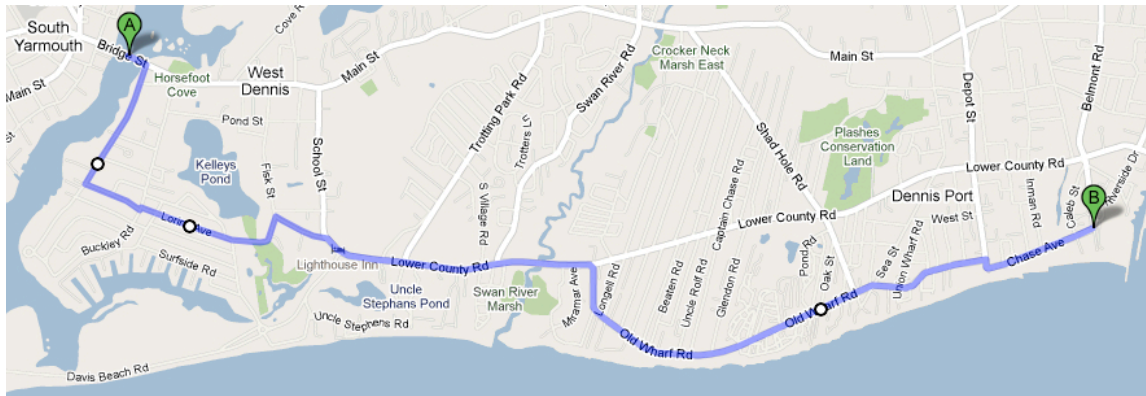


FIGURE 56. Potential Route "28B" in Dennis  
(Source: Cape Cod Commission, Google Maps)

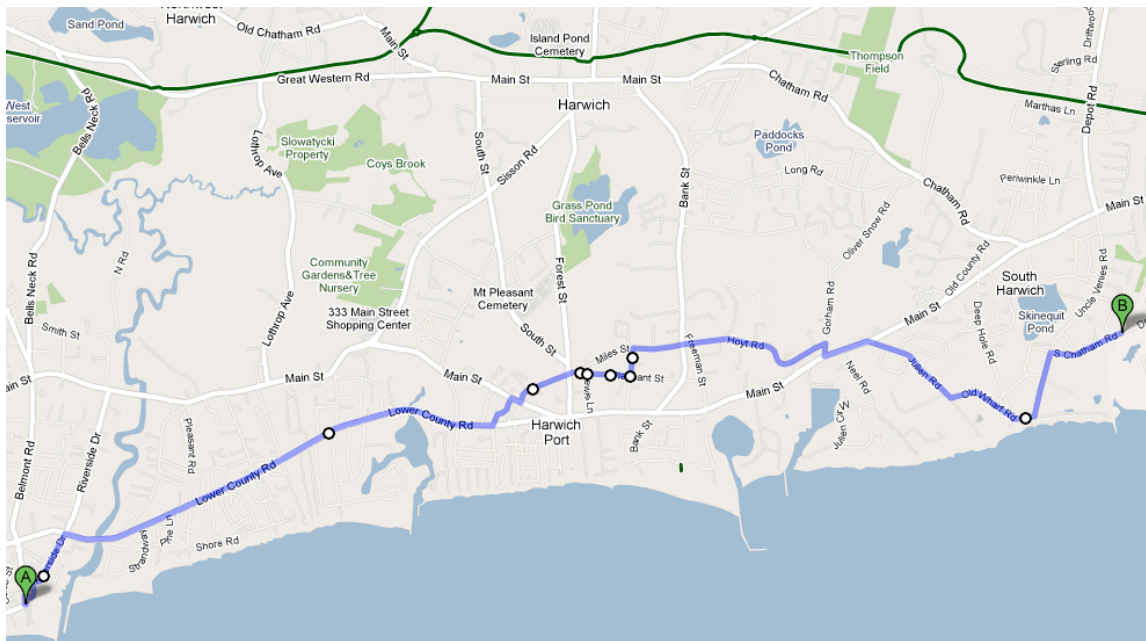


FIGURE 57. Potential Route "28B" in Harwich  
(Source: Cape Cod Commission, Google Maps)

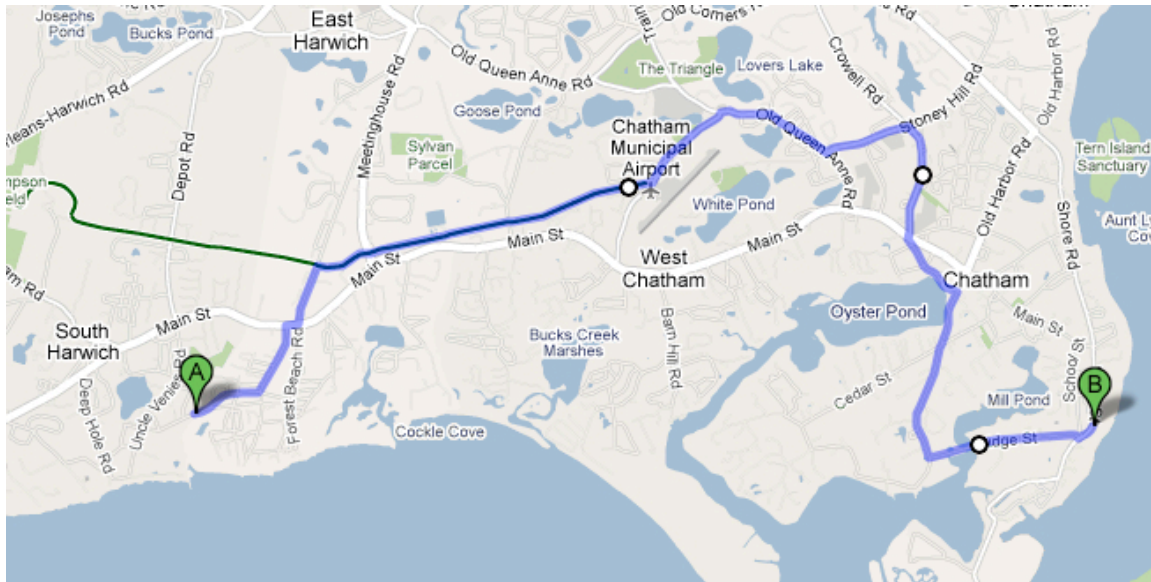


FIGURE 58. Potential Route "28B" in Chatham

## Cape Cod Safe Routes to Schools Bicycle/Pedestrian Network Facility Connections

This 2017 study provides recommendations for improved connectivity between schools and the bicycle and pedestrian facility network.

## Shining Sea Extension Feasibility Study

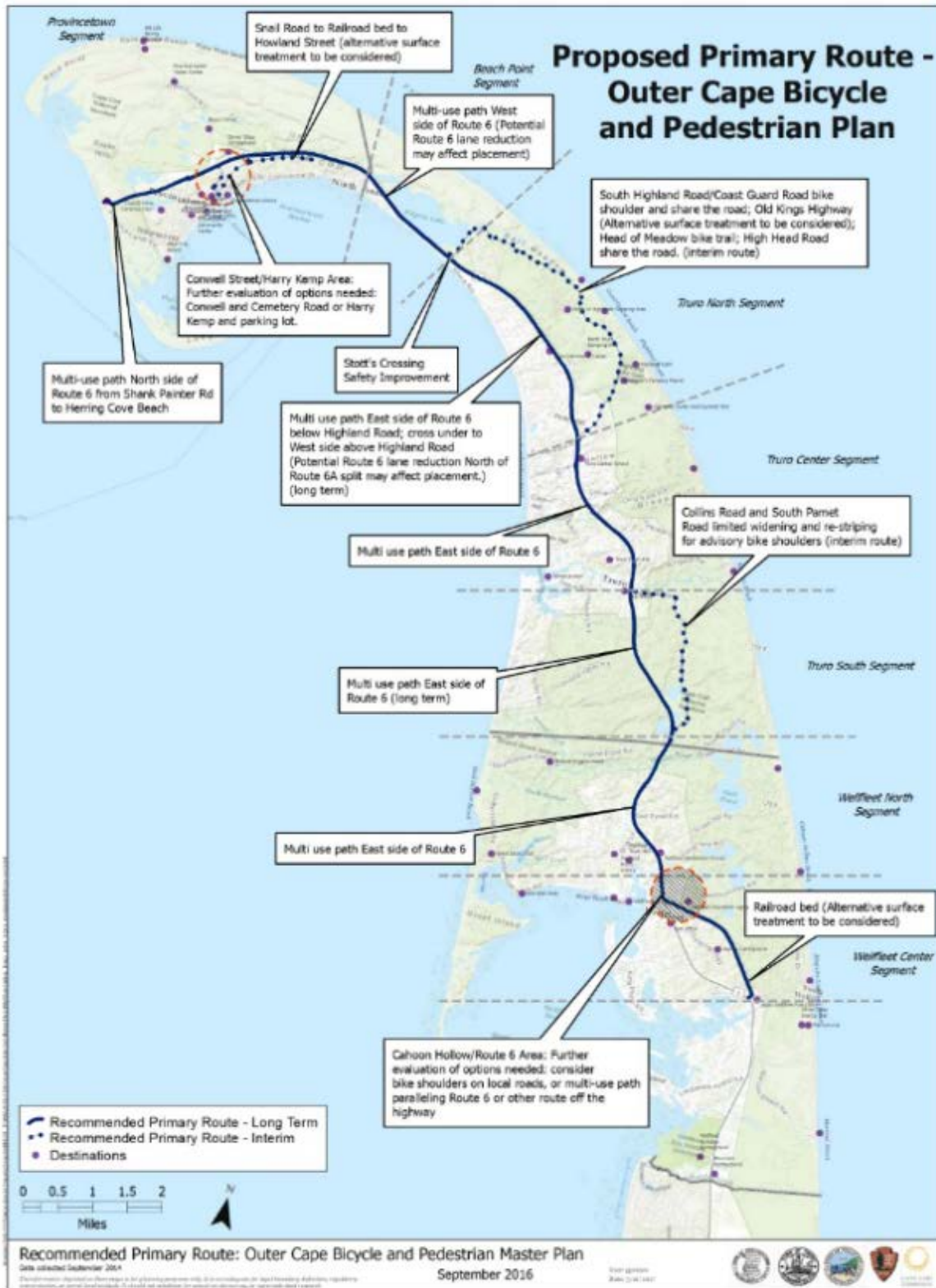
This 2017 study presents potential alternatives for extending the Shining Sea Bikeway from its terminus in North Falmouth to the Cape Cod Canal bike paths.

## Outer Cape Bicycle and Pedestrian Master Plan

This 2016 study provides a recommended alternative for extending the Cape Cod Rail Trail from South Wellfleet to Truro and Provincetown. It also provides recommendations for bicycle and pedestrian connections to destinations in the three communities and Cape Cod National Seashore. The project was funded by the National Park Service who contracted with the Cape Cod Commission to write the plan, in partnership with the three Outer Cape towns. A steering committee comprised of two representatives from each community (town staff and bicycle committee member) plus CCNS and CCC staff guided development of the plan. The map below presents the primary route and secondary route recommendation.



FIGURE 59. Proposed Primary Route for Outer Cape Bicycle and Pedestrian Plan



## Town of Falmouth Plan for an Improved Transportation Network for Bicycling

The 2015 Falmouth Bike Plan is a result of collaboration between the Town of Falmouth's Bikeways Committee and the transportation staff of the Cape Cod Commission.

Between 2010 and 2012 there were 43 reported crashes involving bicycles in Falmouth. It is widely accepted that many more occur but are unreported. This fact serves as one catalyst for action. The Plan identifies numerous problems on roads that would be desirable for bicycling if corrective actions such as reducing motorist speed and installing wider shoulders or bike lanes were implemented to encourage people who want to ride bicycles to feel safe.

The Plan's recommendations focus on the "Three E's" of bicycle transportation planning: Engineering, Education and Enforcement. Engineering includes making improvements for safer road crossings, separated multi-use paths, bike lanes, and "share the road" signage. Engineering also includes appropriately reducing the speed of motorized traffic by introducing traffic calming techniques. Education includes fostering partnerships throughout the town to educate the general public about proper bicycle riding and compatible car driving skills. Enforcement includes working with our police department to help publicize and protect the rights and responsibilities of cyclists, and to better enforce the rules for motorists interacting with vulnerable road users.

*The Falmouth Bikeways Committee's Vision of Falmouth in The Year 2020:*

Falmouth is a great place to both live and to visit because its bike-friendly culture and infrastructure yield calm roads, clean air, and a healthy populace in a vibrant, sustainable economy.

### GOALS:

- To engineer the infrastructure of Falmouth to support bicycling for transportation and recreation. A system of well-marked, safe roads and paths make it an attractive place for children and adults to bicycle to their daily destinations. When cyclists arrive at their destinations there are secure facilities to park their bicycles.
- To promote educational and bicycling programs that support public health and tourism, and that reduce air pollution, traffic and parking problems. Bicycling is an integral and appreciated part of the community culture.
- To foster safe, informed, and respectful interactions among people who walk, drive bicycles and cars on Falmouth's roads and paths. Drivers and cyclists understand their respective responsibilities, and police support both through enforcement and education.

A summary of recommendations developed by the committee to address bicycling needs in Falmouth are presented in the final report.

## **Connecting Town Centers to the Regional Pedestrian & Bicycling Network on Cape Cod**

Cape Cod's town centers represent the region's primary locations for economic and social activity. These "hub" locations generally contain a mix of residential, commercial and civic uses and attract people for shopping, dining, and other services as well as for jobs/work. Making the region's town centers easily accessible to bicycles and pedestrians is important for increasing transportation options and encouraging people to bicycle or walk, rather than drive – especially for short trips. This is beneficial for traffic congestion, for the environment, for public health, and for personal convenience. For people who don't drive, having safe and convenient bicycle and pedestrian connections to town center services and activities is essential.

This study reviews connectivity between town center areas and existing bicycle paths and routes and includes identification of town center areas where sidewalks are needed. The purpose of the study is to identify key areas appropriate for new or improved bikeway connections, as part of the regional goal to facilitate bicycling and walking as viable transportation modes on Cape Cod.

### **Sandwich Pedestrian/Bicycle Planning – Improved Pedestrian and Bicycle Connections with the Cape Cod Canal Multi-use Path**

The plan contains a set of recommended improvements for facilitating bicycling connections between the Cape Cod Canal and downtown Sandwich, as shown in the following figure:

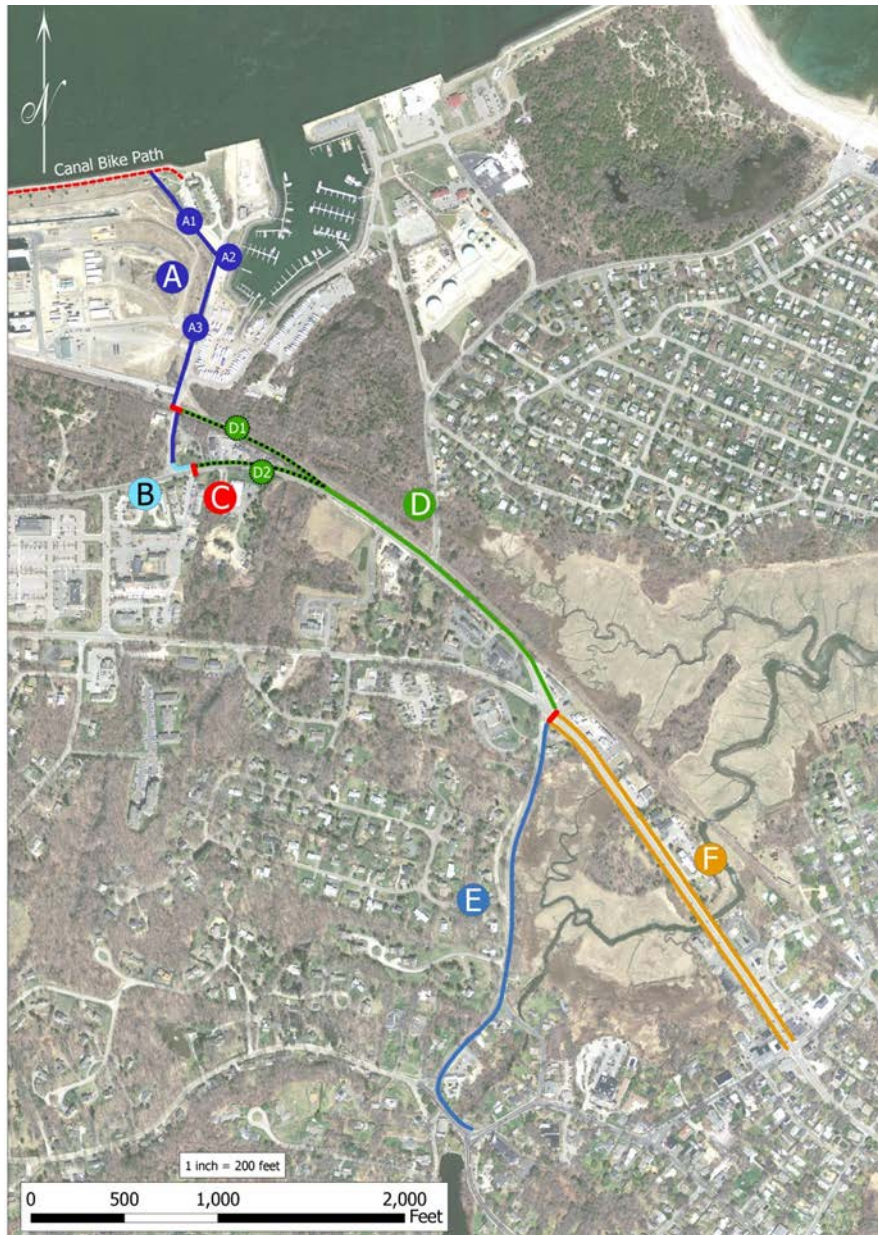


FIGURE 60. Sandwich Bicycle/Pedestrian Planning - Recommended Routes



## Closing the Gaps: Connecting Cape Cod's Bicycle and Pedestrian Network to Transit Routes

The purpose of this effort, released in late 2013, was to review connectivity of existing public transit (bus) routes with existing bicycle routes and paths and recommend improvements to eliminate gaps in connectivity. The review includes sidewalk accessibility along the bus routes. The report also provides an overview of bicycle and pedestrian planning on Cape Cod, building upon previous studies and plans and updating the region's bicycle route/path and sidewalk data. The following table provides a compilation of potential transit route-bicycle path/route connectors. Most of the recommendations for bicycling improvements entail share the road signage and sharrows/stripping due to the limited scope of the project; further analysis would be needed to evaluate the feasibility of providing additional bicycling facilities. Several locations identified in the report have been improved or proposed for improvements since its completion.

TABLE 4. Town Summaries: Recommended Bicycle Connections to Transit Routes

TOWN	BIKE/PED/TRANSIT CONNECTOR	DESCRIPTION	NOTES
Barnstable	Route 28 sidewalks	Bus route pedestrian access	No sidewalks between Route 149 and Stop & Shop plaza or Marstons Mills Marketplace.
Bourne	Perry Ave connector	Connects Canal bike path to Main Street (bus route). Share the road—striping, signage, sharrows.	Connects to 3 Mile Park, but not direct access to canal path.
	Old Bridge Road connector	Connects Canal bike path to Main Street (bus route). Share the road—striping, signage, sharrows.	Direct connection.
	County Road sidewalk	Bus route pedestrian access	Lacks sidewalks
	Route 28A/Sandwich Road sidewalk	Bus route pedestrian access	Lacks sidewalk most of route.
Brewster	Thad Ellis Road connector	Connects Route 6A (bus route) to CCRT. On road connection – striping, signage, sharrows. 1/4-mile direct connection.	
	Underpass Road connector	Connects Route 6A (bus route) to CCRT. On road connection – striping, sharrows, signage	
	Millstone Road connector	Connects Route 6A (bus route) to CCRT. On road connection – striping, sharrows, signage	
	Route 137 connector	Connects Route 6A (bus route) to CCRT. On	

		road connection – striping, signage, but paved shoulder may be feasible in sections	
Chatham	Route 124 connector	Connects Route 6A (bus route) to CCRT. On road connection – striping, signage	
	Route 137 sidewalk	Bus route pedestrian access	No sidewalks on Route 137
	Route 137 connector	Connects Route 28 (bus route) to CCRT. On road, shoulders, striping, signage	
	Sam Ryder Road connector	Connects Route 28 (bus route) to CCRT. On road connection – striping, signage, sharrows	
	George Ryder Road connector	Connects Route 28 (bus route) to CCRT. On road connection with striping and shoulders or bike lane. Off road path may be feasible.	
Dennis	Route 28 sidewalk	Connects Route 28 (bus route) to CCRT	Most of route has sidewalk but condition is poor in some locations. If enhanced could accommodate bikes.
	Shad Hole Road connector	On road connection – striping, sharrows, signage	
	Depot Street connector	Connects Route 28 (bus route) to Lower County Road bike route. On road connection – striping, sharrows, signage	
	Sea Street connector	Connects Route 28 (bus route) to Lower County Road bike route. On road connection – striping, sharrows, signage.	
	Route 134 sidewalk	Bus route pedestrian access.	Route 134 lacks sidewalk north of Patriot Square
Eastham	Route 28 sidewalk	Bus route pedestrian access	Gaps in connectivity outside of Dennisport.
	Governor Prentice Road connector	Connects Route 6 (bus route) to CCRT. On road connection – striping, sharrows, signage. NPS received funding for flashing beacon crosswalk at Route 6 intersection for connection to Fort Hill.	
	Samoset Road connector	Connects Route 6 (bus route) to CCRT. On road connection – striping, sharrows, signage	



	Route 6 sidewalk	Bus route pedestrian access	East side of Route 6 lacks sidewalks, Town Hall and Brackett Road commercial areas are the bus stop locations.
	Bike/Ped/Transit Connector	Description	Notes
Falmouth	Route 151/Sandwich Road connector	Connects Route 151 (bus route) to Sandwich Road bike route. Signage to direct riders to bus stop location (at gas station set back from road).	
Harwich	Route 28 sidewalk	Bus route pedestrian access.	Gaps in sidewalk connectivity outside of Harwichport to West Harwich. In 2010 bike/ped improvement plan.
Mashpee	Route 28 sidewalk	Bus route pedestrian access	Some locations without sidewalk.
	Route 151 sidewalk	Bus route pedestrian access	Sidewalk at school and Mashpee Commons. Town plans to extend bike path to Falmouth line.
	Bay Ridge connector	Connects Route 6A (bus route) to CCRT. On road –striping, sharrows, signage.	Involves access through private property.
Orleans	Route 28 sidewalk	Bus route pedestrian access	No sidewalks north of Finlay Road. Narrow shoulder width.
	Main Street connector	Connects Route 6A (bus route) to CCRT. On road –striping, sharrows, signage	
	West Road connector	Connects Route 6A (bus route) to CCRT. Also connects gap in bike path. On road –striping, sharrows, signage.	
Provincetown	Shank Painter connector	Connects Shank Painter Road (bus route/stop) to Bradford Street bike route. On road. Bike lane or paved shoulders, striping.	Road lacks sidewalk in most locations Heavy volume of bike and pedestrian traffic.
Sandwich	Merchants Square connector	Connects Route 6A bus route to proposed Tupper Road bike route. On road through plaza Signage, sharrows, striping	
Truro	Route 6 sidewalk	Bus route pedestrian access	No sidewalks except for

			segment between school and police station. 4' shoulders along much of route. May be addressed in Outer Cape Bicycle Pedestrian Master Plan.
	Bike/Ped/Transit Connector	Description	Notes
Wellfleet	Old County/Blackfish Variety connector	Connects Route 6 (bus route) to CCRT. Crosswalk, striping to improve connection between CCRT and bus stop/Old County Road.	May be addressed in Outer Cape Bicycle Pedestrian Master Plan.
	Springbrook connector	Connects Route 6 (bus route) to CCRT	Other options nearby to connect West Road and Audubon to CCRT cross private property.
	Yarmouth Higgins Crowell connector	Connects Route 28 (bus route) to bike path and proposed CCRT extension. On road. Striping, sharrows, signage	

## Yarmouth Road Corridor Study

Yarmouth Road in Barnstable experiences significant vehicle queues during peak hours of operation. The corridor is the primary access for some Cape towns to the Cape Cod Hospital. Seasonal and peak hour congestion often cause delays for emergency vehicles en route to the Hospital. The intersection of Yarmouth Road and Route 28 in Barnstable is a known high crash location and is identified in the Hyannis Access Study as an intersection in need of improvements. Yarmouth Road serves as an important access road into Hyannis Center, which accommodates both commercial and business development. Hyannis Center is a Growth Incentive Zone. A viable Yarmouth Road corridor is significant for many modes of transportation, including walking, biking, automobile, transit and rail. The Hyannis Transportation Center is located off Route 28, a short distance from the Yarmouth Road/Route 28 intersection. Information on the study is available at:

[www.capecodcommission.org/departments/technicalservices/transportation/projects/olderprojects](http://www.capecodcommission.org/departments/technicalservices/transportation/projects/olderprojects)

After many months of review and public input, one concept was recommended: Concept 1a. This concept includes a multi-use path (bike path) connecting the Hyannis Transportation Center to a point just south of Route 6. The towns of Yarmouth and Dennis are currently planning to extend the existing Cape Cod Rail Trail just east of Willow Street (south of Route 6).

Concept 1a is a continuation of the four-lane divided Willow Street roadway that currently exists near Route 6 Interchange 7 to the Route 28/Yarmouth Road intersection in Barnstable and uses a

westerly alignment at the Route 28/Yarmouth Road intersection. The cross section and concept plan are shown in the following figures:

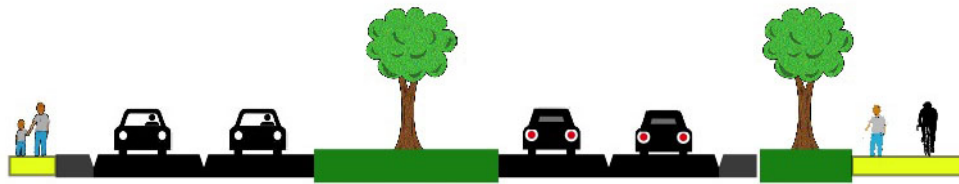


FIGURE 61. Yarmouth Road Proposed Cross Section (looking southerly)

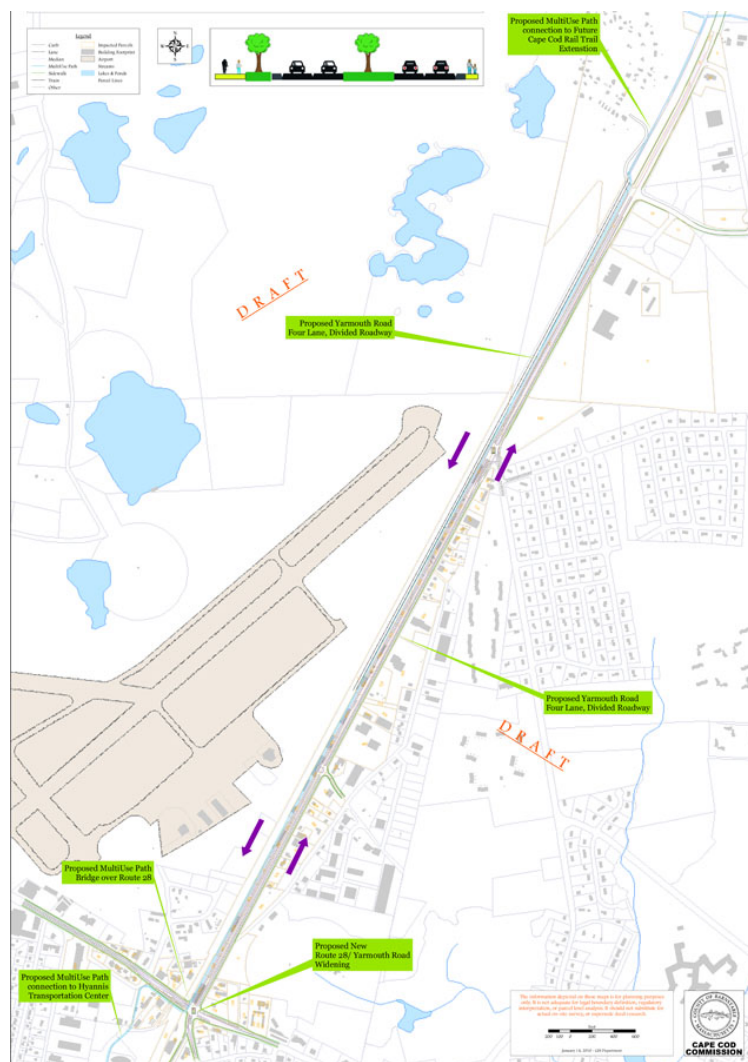


FIGURE 62. Yarmouth Road Recommended Concept Plan

## **Harwich Bicycle/Pedestrian/Transit**

As part of an effort to enhance the economic development of Saquatucket Harbor in Harwich Port, the Town of Harwich sought technical assistance from the Cape Cod Commission to provide safe and effective pedestrian and bicycle facilities between the Cape Cod Rail Trail/Old Colony Rail Trail and Route 28, with a specific focus on a connection between Harwich Center and Harwich Port.

The study includes several recommendations for better bicycling and pedestrian access. The following figure includes a summary of recommended bicycle and pedestrian enhancements in the study area:

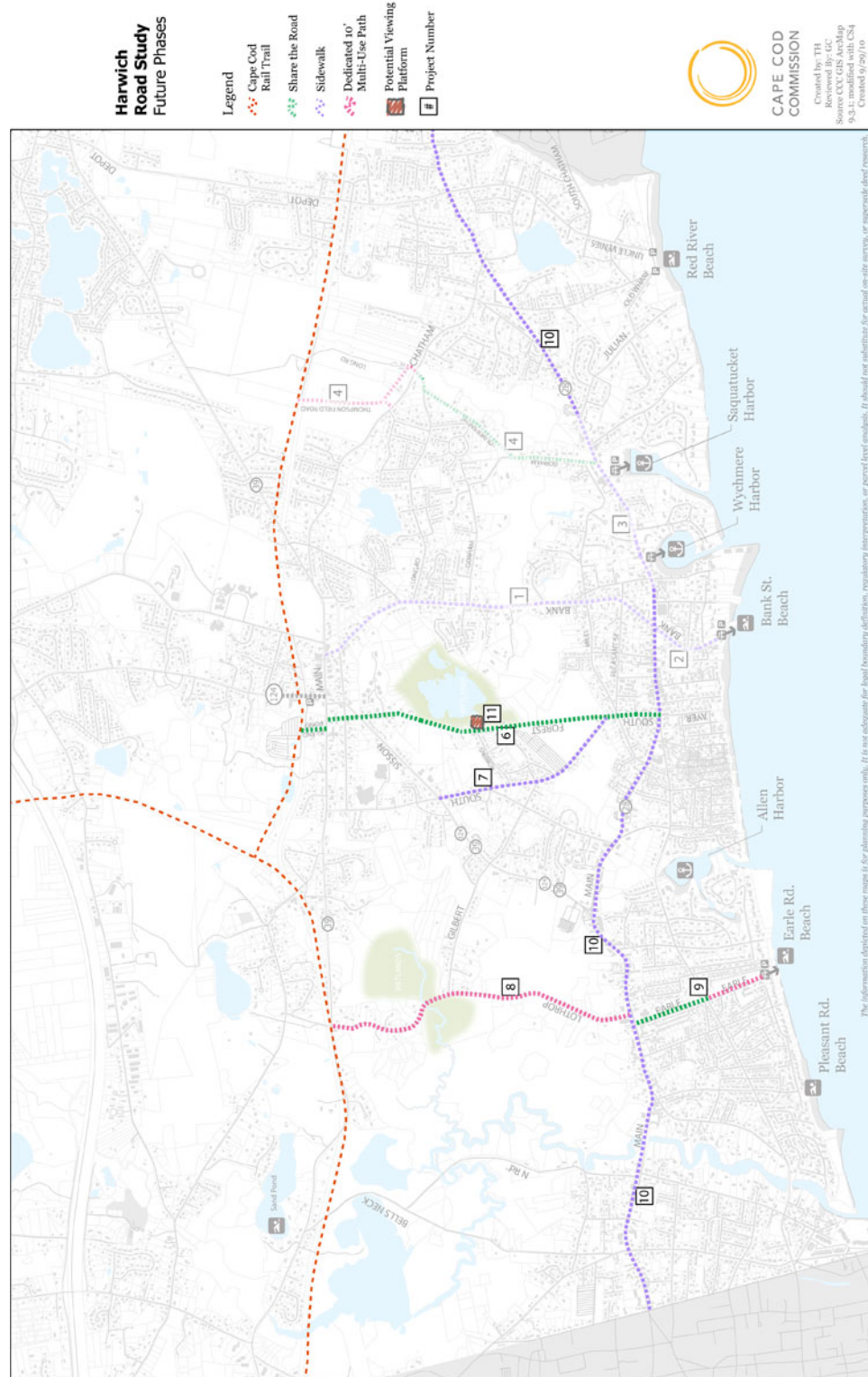


FIGURE 63. Harwich Bicycle/Pedestrian/Transit Study Recommendations



## **Barnstable**

The town of Barnstable has a comprehensive Open Space and Recreation Plan. The plan is available from the Town of Barnstable's website at:

<http://www.town.barnstable.ma.us/CommunityPreservation/CPA%20Plan.pdf>

As part of this effort, town-wide mapping of existing and proposed improvements for bicycling & pedestrian accommodation are shown in the following figure:

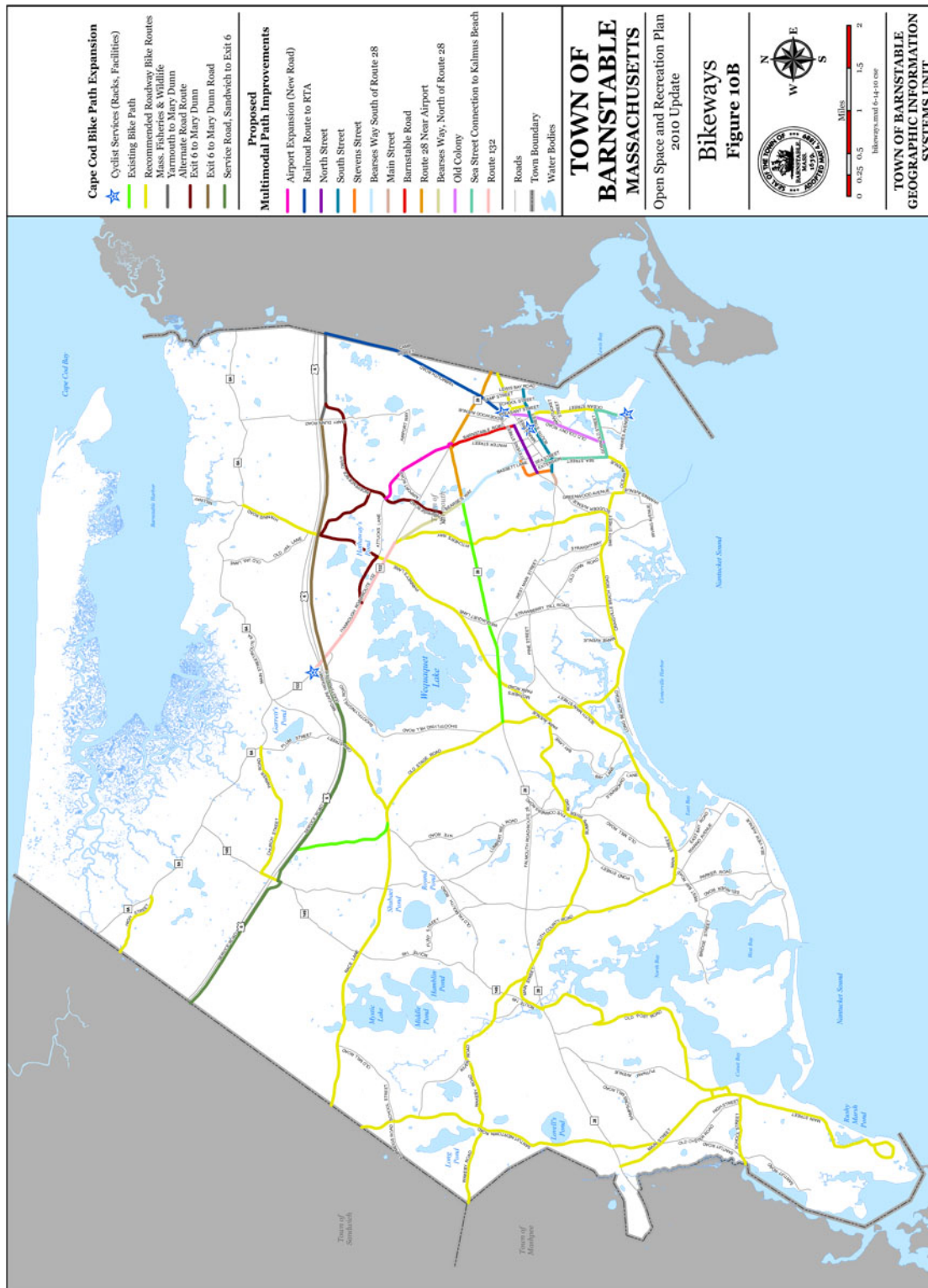


FIGURE 64. Barnstable Bicycling & Pedestrian Planning

## Dennisport Revitalization Master Plan

The Dennis Port Revitalization Master Plan, produced by a consultant under the leadership of the Dennis Port Revitalization Committee contains recommendations for an interconnected bicycling network.

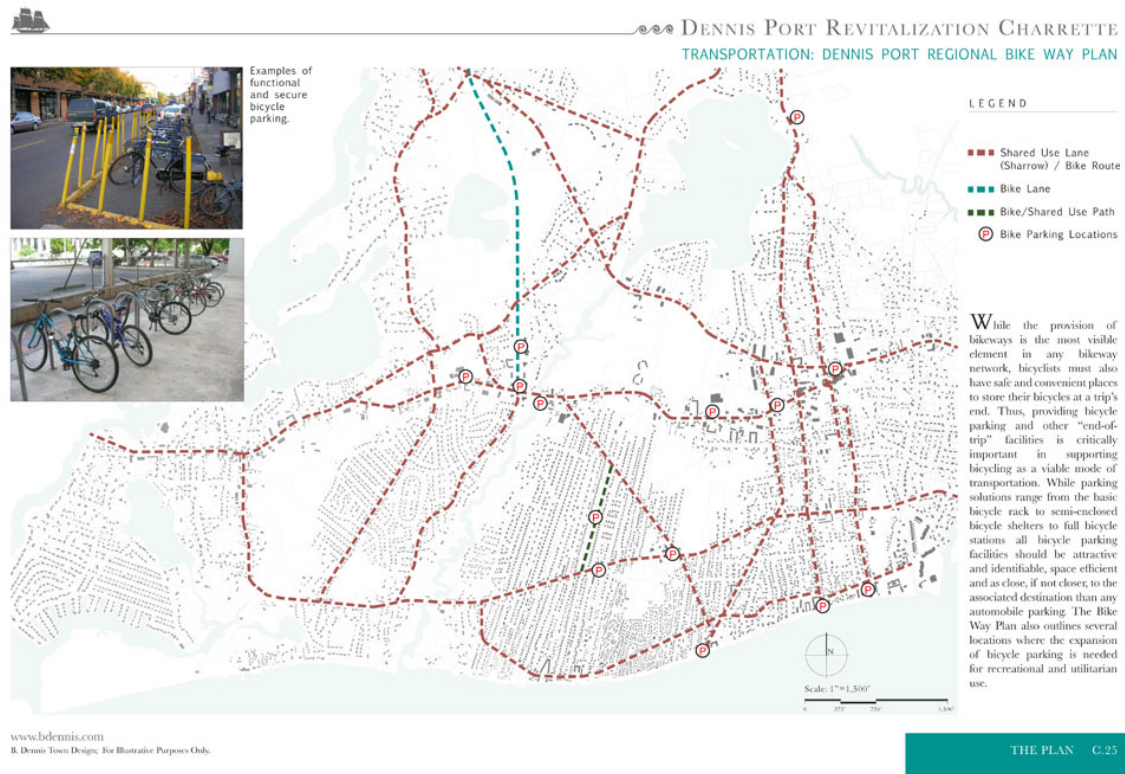


FIGURE 65. Dennis Port Regional Bike Way Plan

## Orleans South Orleans to Orleans bike path

The Town of Orleans completed Feasibility study for the creation of a safe and continuous bike and pedestrian facility that connects South Orleans to Orleans Center.

<https://www.town.orleans.ma.us/bike-and-pedestrian-committee/pages/south-orleans-to-orleans-trail-study>

## CCNS Integrated Bicycle Plan for Cape Cod

In 2010, Cape Cod National Seashore (CCNS) completed an Integrated Bicycle Plan (“Bicycle Feasibility Study”) for Cape Cod, in partnership with the Cape Cod Commission, to identify improvements necessary to develop an integrated bicycle network throughout Cape Cod.

The study helps lay the groundwork to improve bicycling conditions on Cape Cod by developing a comprehensive and connected bicycle network. It includes a list of both infrastructure improvements and programmatic initiatives to promote bicycling, enhance bicycle access and improve safety. Three primary classifications were developed to categorize the proposed projects; improvements to existing facilities; new facilities; and other initiatives. The study categorized the top recommended/selected projects according to the level of benefit and the barriers to implementation. All proposed projects should be viewed as valid and potential projects that may be pursued for funding. Coordination between Cape Cod National Seashore, the Cape Cod Commission, and/or the respective municipality is necessary to coordinate selection and implementation of individual projects. Some projects, particularly Cape Cod Trail extensions, have been formally programmed or planned since the study's completion. A consolidated list of all proposed projects is included in the full report are available at:

[www.capecodcommission.org/bikeped](http://www.capecodcommission.org/bikeped)

For each of the 47 recommended projects listed here, the study includes a basic project description, preliminary design concepts, a planning-level cost estimate, and recommendations for implementation. Some projects have more detailed cost estimates as a result of greater levels of detail relating to alignments, the type of facility, proposed configurations, and total distance. However, many projects are merely conceptual, identifying only a corridor or general route in need of improvement without specifying the project length, type or level of accommodation to be provided.

Project 5.2.1: Design Alternatives for Cape Cod Rail Trail Extension to Provincetown

Project 5.2.2: Wayfinding Signage and Pavement Markings on CCRT

Project 5.2.3: Intersection Improvements on Setucket Road Path

Project 5.2.4: Enhance Bicycling Conditions by Providing Paved Shoulders

Project 5.2.5: Identify Possible Sidewalks and Pedestrian Crossings near Brackett Road & Route 6

Project 5.2.6: Western Extension of CCRT through Independence Park

Project 5.2.7: Western Extension of CCRT to Hyannis Transportation Center

Project 5.2.8: Connect Chatham Municipal Parking Lot and Old Colony Rail Trail and Old Queen Anne Road via Route 137 Improvements

Project 5.2.9: Extension of the Old Colony Rail Trail from Volunteer Park to Schoolhouse Pond

Project 5.2.10: Connect Shining Sea Bikeway to Gifford Street

Project 5.2.12: Parking Improvements at Trailheads

Project 5.2.13: Connect Cape Cod Canal Bikeway to Hyannis Transportation Center

Project 5.2.14: Develop Plan for Intermodal Center in Falmouth

Project 5.2.15: Improve Bicycle Facilities on Tupper Road South of Route 6A

Project 5.2.16: Evaluate Use of Unpaved Roads for Bike Path Connections in Cape Cod National Seashore

Project 5.3.1: Evaluate Local Roads and Establish Bicycle Connections between Cape Cod National Seashore and Neighboring Communities

Project 5.3.2: Feasibility Study and Design of Bike Path along Route 6 from Herring Cove Parking Lot to Race Point Road

Project 5.3.3: Identify Possible Connections between the Cape Cod Rail Trail and Cape Cod National Seashore Trails

Project 5.3.4: Regional and local Pedestrian and Bikeway connectivity to Dennis Port

Project 5.3.5: Identify Regional Connections between Existing Paths and Locations with High Pedestrian Traffic

Project 5.3.6: Identify a "Shore Route" South of Route 28 from Woods Hole in Falmouth to Stage Harbor in Chatham

Project 5.3.7: Identify a "Bay Route" from the Cape Cod Canal in Bourne to Orleans

Project 5.3.8: Extend Shining Sea Bikeway through Bourne to Cape Cod Canal Bikeway

Project 5.3.9: Connect Harwich Port to Old Colony Rail Trail

Project 5.3.10 Designate Route 28 as a Bike Route and Improve Conditions

Project 5.3.11 Establish Bicycle & Pedestrian Connections between Orleans Villages

Project 5.3.12 Connect MacMillan Pier to Cape Cod National Seashore Bicycle Paths

Project 5.3.13 Connect Province Lands Bicycle Trail and Head of the Meadow Trail

Project 5.3.14 Connect Truro Village Center to Truro Destinations

Project 5.3.15: Connect Shawme-Crowell State Forest to the Cape Cod Canal Bikeway

Project 5.3.16: Connect Wellfleet Bay Wildlife Sanctuary to Cape Cod Rail Trail

Project 5.3.17: Identify Potential Bikeway Alignment through Sandwich Historic District

Project 5.3.18: Identify and Implement "OBHC Triangle" Route

Project 5.3.19 Improve Bicycling Conditions on Route 130 in Sandwich

Project 5.3.20: Improve Bicycling Conditions on Quaker Meeting House Road in Sandwich



Project 5.3.21: Establish a Bicycle & Pedestrian Connection from Fort Hill Area Trails to Governor  
Prentice Road

Project 5.3.22: Define Loops and Connections to Develop a “Grand Cape Tour” Along the Cape Cod  
Rail Trail

## CAPE COD COMMISSION

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3225 MAIN STREET • P.O. BOX 226 • BARNSTABLE, MASSACHUSETTS 02630  
(508) 362-3828 • Fax (508) 362-3136 • [www.capecodcommission.org](http://www.capecodcommission.org)

