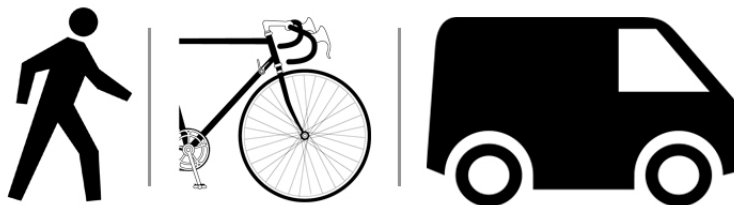




CAPE COD
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A plan for improved pedestrian and bicycle facilities in Harwich

January 2011



A plan for improved pedestrian and bicycle facilities in Harwich

BACKGROUND

As part of an effort to improve bicycling, walking and transit service in Harwich and enhance the economic development of Saquatucket Harbor in Harwich Port. The Town of Harwich is seeking 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. In addition, the Town of Harwich is looking to provide safe pedestrian and bicycle connections as well as coordination with public transit service especially between Wychmere Harbor and Saquatucket Harbor.

The goals of this study include:

- Identify safe and effective pedestrian and bicycle access 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.
- Identify safe and effective pedestrian and bicycle access between Wychmere and Saquatucket Harbors along Route 28 that would intersect with a connection to Harwich Center.
- Identify the potential for shuttle bus service between Wychmere and Saquatucket Harbors.
- Improve pedestrian access along Route 28 from Dennis to Chatham.
- Coordinate with the Regional Transportation Plan/Cape Cod Bike Plan. A goal of this effort is to construct new bicycle/pedestrian facilities using available funding sources. One such source is the Cape Cod Transportation Improvement Program (TIP) administered by the Cape Cod Commission and funded by the Massachusetts Department of Transportation and Federal Highway Administration. The TIP is an implementation process that flows from the Cape Cod Regional Transportation Plan (RTP).

Commission staff will work with the Town of Harwich to integrate these bicycle/pedestrian efforts into the current update of the RTP. The RTP update will include a chapter dedicated to bicycle/pedestrian issues and include efforts to designate regional bicycle routes.

PROJECT INITIATION

The Cape Cod Commission staff participated in initial site visits and kick-off meetings for the project with the Harwich Town Planner and invited participants.

During these site visits, the Cape Cod Commission staff gathered information from town staff and other sources regarding any previous pedestrian/bicycle or shuttle bus planning efforts within the study area. At the kickoff meetings, CCC staff recorded ideas and input. Roles and responsibilities of the team were reviewed and Cape Cod Commission staff worked with the Town staff to determine stakeholders, agencies, and organizations to contact, to set strategies for working with the community, and to assist in preparing the public involvement portion of the project. Subsequent meetings were scheduled during this trip to finalize the task.

Staff have participated in numerous site visits and planning meetings over the duration of this effort. Meeting notes are available in the appendix of this report.

COLLECT AND ANALYZE EXISTING DATA, PLANS, AND PROPOSALS

The Cape Cod Commission staff conducted an inventory of existing sidewalks, bike trails/routes and transit routes and analyzed these routes for connectivity within the study area. The inventory and analysis includes the following for each principal trail/route:

- Description of existing facilities and assessment of condition
- Estimated volume of use on sidewalk/bike route/bike path and transit. Potential sidewalks/bike routes, bike path, and transit service have been compared to other proposed facilities based on Cape Cod Commission staff experience with similar facilities.
- Roadway congestion problem areas
- Associated parking/park and ride facilities
- Existing Rights-of-Way concerns

Existing Facilities

The Cape Cod Commission staff has conducted a review of the study area and identified existing bicycle and pedestrian facilities (see next figure). For the most part these consist of road segments with usable shoulders and various types of sidewalks. Existing Cape Cod Regional Transit Authority bus stops are also indicated. Of note is the condition and irregular width/layout of the sidewalk on Bank Street. This facility needs upgrading to meet current standards and expected demand.

Environmental Resources

The Cape Cod Commission staff has collected environmental resource information (including wetlands, sensitive habitat, wellhead protection areas, etc.) using existing data sources sufficient to identify potential constraints and issues. These areas are identified on the following figure titled “Significant Natural Resources.” It is noteworthy that many of the most attractive biking or walking areas such as Forest Street are constrained by the close proximity of wetlands.

Crash History

A review of crash data (shown in Table 1 and on a following figure) indicates the higher incidence of study area crashes at locations along Route 28 between the Dennis town line and Bank Street. The following table show the number of crashes identified at each intersection within the mapped area for the period from 2006-2008 based on MassDOT records. As a lower limit, only intersections with four or more crashes are shown. There were no fatality crashes identified. Using MassDOT safety analysis methodology, each Injury Crash is assigned a value of 5 and each Property Damage Only Crashes are assigned a value of 1. These scores are totaled to determine the “Equivalent Property Damage Only” (EPDO*) for each location.

Table 1 - Crash History 2006-2008

Street	Intersection	Number of Crashes	Injury Crashes	Property Damage Only	EPDO*
Queen Anne Road	Pleasant Lake Avenue (Rt 124)	11	3	8	23
Belmont Road	Lower County Road	10	3	7	22
Pleasant Lake Avenue	<i>North of Whip O Will Lane</i>	7	3	4	19
Chatham Road	Lovers Lane	7	3	4	19
Main Street	Depot Street	5	3	2	17
Sisson Road (Rt 124/39)	Main Street (Rt 28)	8	2	6	16
Belmont Road	Willow Street	4	3	1	16
Main Street (Rt 124/39)	Pleasant Lake Avenue (Rt 124)	5	2	3	13
Great Western Road	Lothrop Avenue	5	2	3	13
Main Street (Rt 28)	Bank Street	4	2	2	12
Main Street (Rt 28)	Lower County Road	4	2	2	12
Queen Anne Road	Orleans Harwich Road (Rt 39)	6	1	5	10
Bank Street	Pleasant Street	5	1	4	9
Lower County Road	Grey Neck Road	5	1	4	9
Lower County Road	Earle Road	4	1	3	8
Main Street (Rt 28)	Doane Road	4	1	3	8
Bank Street	Miles Street	5	0	5	5
Main Street (Rt 28)	Brooks Road	4	0	4	4

Source: MassDOT Crash Records 2006-2008

Various Roads in Harwich | Existing Conditions: Pedestrian and Bike Facilities



No Shoulder



Bituminous Sidewalk w/ Landscape



Shoulder



Portland Cement Sidewalk












Brick Sidewalk

Harwich Bike Study

Existing Conditions

Legend

-  Cape Cod Rail Trail
-  Shoulder
-  Bit Sidewalk w/ Landscape
-  Curbed Sidewalk
-  Brick Sidewalk
-  Existing Bus Stop
-  Beach
-  Harbor
-  Public Parking
-  Rest Area/
Public Access



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Created by: TH
Reviewed By: LM
Source CCC GIS ArcMap
9.3.1; modified with CS4
Map modified 12/29/10

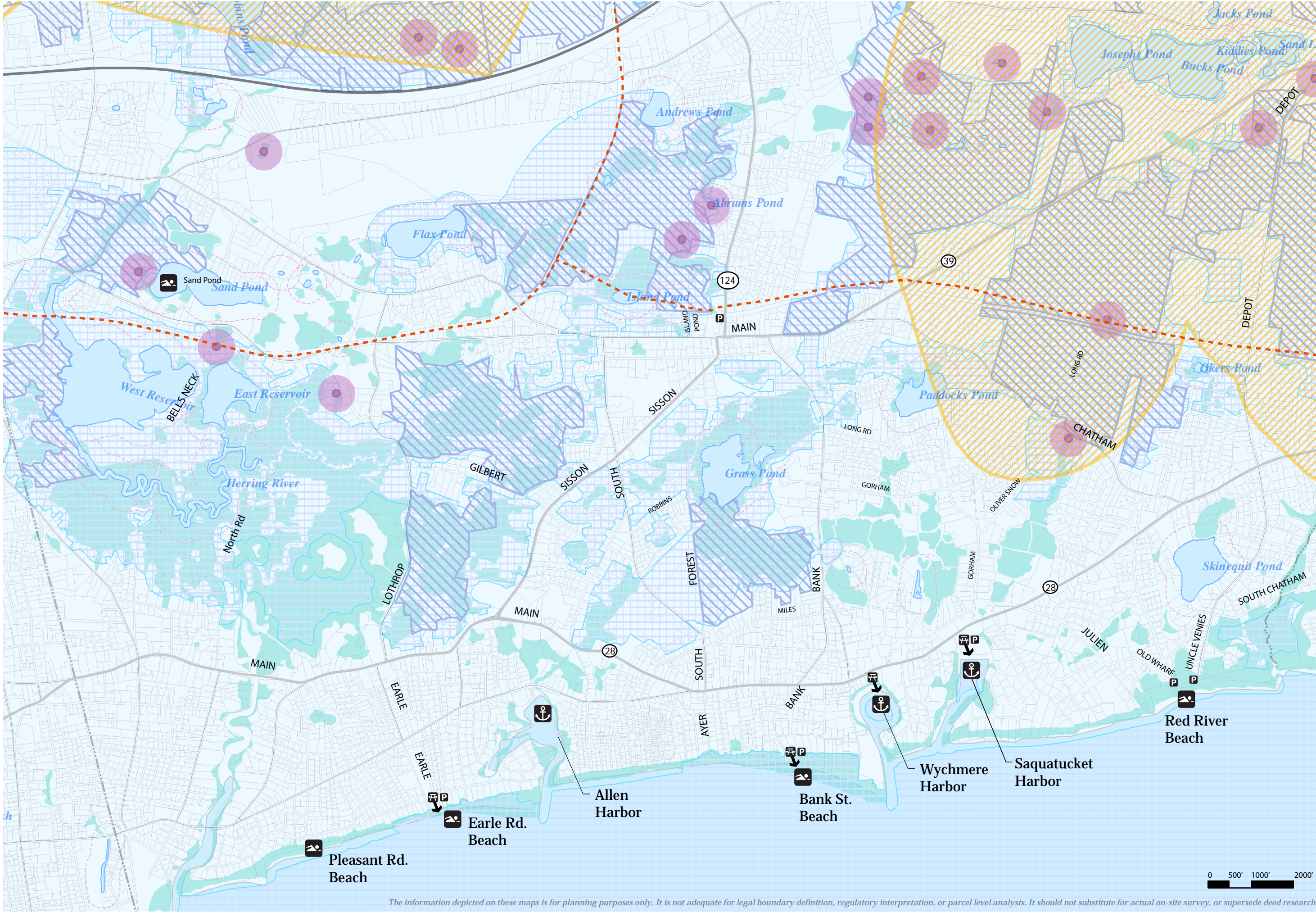


The information depicted on these maps is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel level analysis. It should not substitute for actual on-site survey, or supersede deed research.

Harwich
Bike Study
Significant
Natural
Resources

Legend

- Cape Cod Rail Trail
- Current DEP Zone II (2007)
- 350' Vernal Pool Buffer
- Water Body
- Potential Public Water Supply Area
- Priority & Estimated Habitats (2008)
- DEP Wetland Area
- Bus Stop
- Beach
- Harbor
- Public Parking
- Rest Area/
Public Access





Harwich Crash Locations

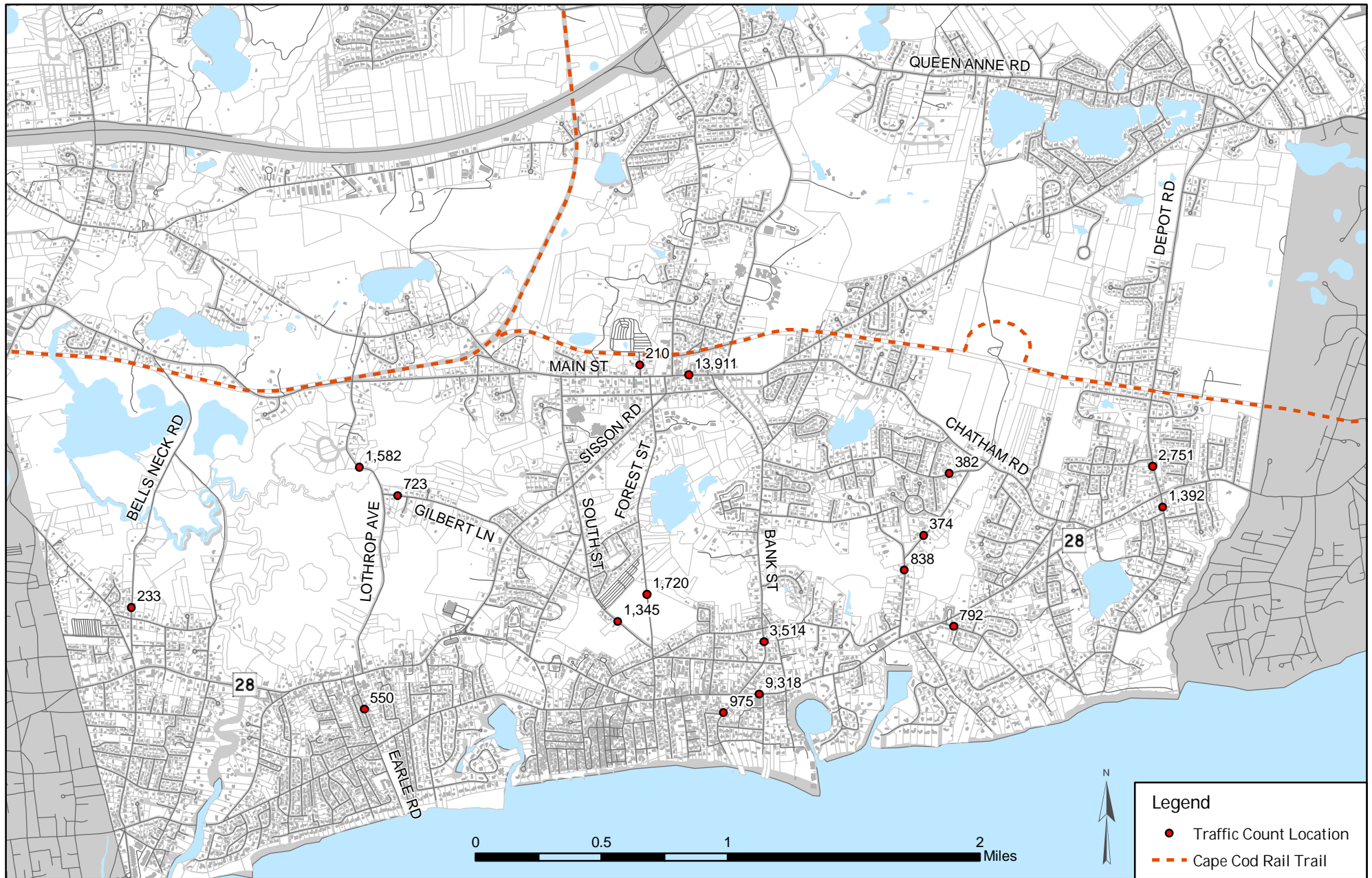
2006-2008

Source: MassDOT Crash Records, 2006-2008



Traffic Volumes

Weekday and Weekend daily traffic flows at sampled locations show heavier volumes on Route 28 and Main Street (see figure) and lesser volumes on the north-south connector roads.



Harwich Summer Average Daily Traffic (Weekday)

Source: CCC Traffic Counting Program, 2010



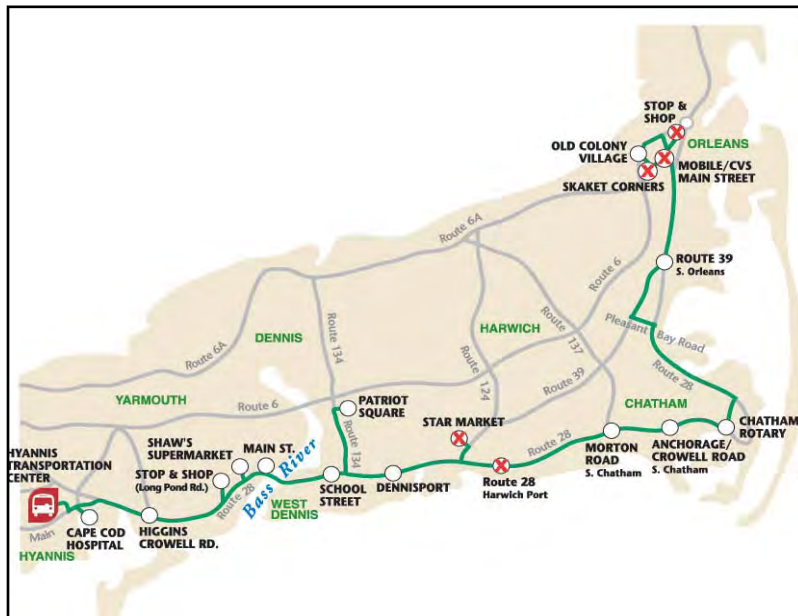


Harwich Summer Saturday Daily Traffic

Source: CCC Traffic Counting Program, 2010



Public transportation is currently provided by the Cape Cod Regional Transit Authority's "Hyannis-Orleans" and "Flex" services as shown in the following figures:



ALTERNATIVES DEVELOPMENT

Using the data and analysis generated in previous tasks as well as input obtained during internal review, the Cape Cod Commission staff has developed alternatives for share-the-road/bicycle routes/sidewalks/bicycle paths/shuttle bus route improvements.

The following criteria were used in the consideration of alternatives:

- Prioritize potential pedestrian/bicycle connectivity 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;
- Prioritize potential pedestrian/bicycle/shuttle bus connectivity between Saquatucket Harbor, Wychmere Harbor, and Harwich Center;
- Identify opportunities for connections to the community;
- Identify partnership opportunities and funding strategies involving partners;
- Estimate cost of alternatives;
- Identify environmental constraints for all alternatives;
- Identify Right-of-Way constraints for all alternatives.

The MassHighway (MassDOT) Design Manual includes guidance on types of accommodation based on factors such as traffic volume, available right-of-way, and travel speeds. This guidance is provided in the following table/figure:

Exhibit 5-12
Widths of Usable Shoulders (In Feet)

Area Type	Roadway Type			Local Roads
	Freeways ¹	Arterials ²	Collectors ²	
Rural Natural	10 to 12	4 to 12	4 to 10	2 to 8
Rural Developed	10 to 12	4 to 12	4 to 10	2 to 8
Rural Village	N/A	4 to 12	4 to 10	2 to 8
Suburban Low Density	10 to 12	4 to 12	4 to 10	2 to 8
Suburban High Density	10 to 12	4 to 12	4 to 10	2 to 8
Suburban Village/Town Center	N/A	4 to 12	4 to 10	2 to 8
Urban	10 to 12	4 to 12	4 to 10	2 to 8

Source: *Flexibility in Highway Design*, AASHTO 2004, Chapter 6 Cross Section Elements

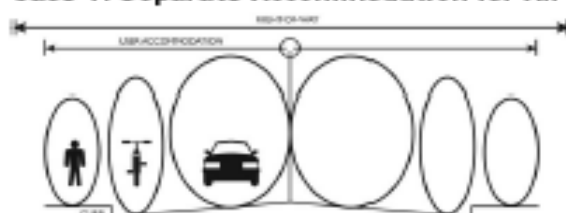
1 Left shoulders are required on Freeways and other divided roadways. See the AASHTO Green Book for left-shoulder guidance.

2 Shoulder widths less than the values shown above may be used if a design exception is obtained. See Chapter 2 for a description of the design exception procedure. Situations where narrower shoulders may be considered are described below.

Note: An additional 2-foot offset from the edge of the shoulder is required to vertical elements over 6-inches in height (such as guardrail).

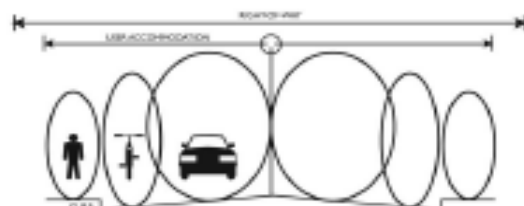
Minimum 4-foot shoulders are recommended for all arterials and collectors because of the value they provide for bicycle and pedestrian (particularly in rural areas) accommodation, and motor vehicle safety. If a design exception is obtained, shoulders narrower than 4 feet may be used in constrained areas where separate pedestrian accommodation is provided and shared bicycle/motor vehicle accommodation is suitable. Examples of these conditions are where design speeds are less than 45 miles per hour and traffic volumes are relatively low (less than 4,000 vehicles per day), or where the design speed is 30 miles per hour or less. Footprint road projects, as described in Chapter 2, could also consider narrower shoulders.

Case 1: Separate Accommodation for All Users



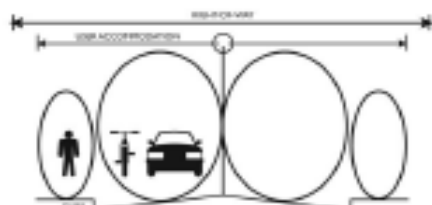
- Often the preferred option to provide safe, convenient, and comfortable travel for all users.
- Appropriate for areas with moderate to high levels of pedestrian and bicycle activity.
- Appropriate for roadways with moderate to high motor vehicle speeds.
- Appropriate in areas without substantial environmental or right-of-way constraints.

Case 2: Partial Sharing for Bicycles and Motor Vehicles



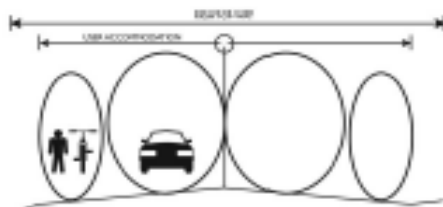
- Used in areas where the width necessary to provide Case 1 accommodation is not available.
- Under Case 2, pedestrians are provided with a sidewalk or separate path while space for bicyclists and drivers overlap somewhat.
- Appropriate in areas with low motor vehicle speeds and low to moderate motor vehicle volumes.

Case 3: Shared Bicycle/Motor Vehicle Accommodation



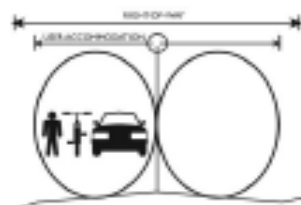
- Under Case 3, pedestrians remain separate but bicycle and motor vehicle space is shared.
- Used in densely developed areas where right-of-way is constrained.
- Also applicable to most residential/local streets where speeds and traffic volumes are low.

Case 4: Shared Bicycle/Pedestrian Accommodation



- Under Case 4, pedestrians and bicyclists share the shoulder.
- Common in rural or sparsely developed areas.
- Appropriate for areas with infrequent pedestrian and bicycle use.

Case 5: Shared Accommodation for All Users



- Under Case 5, all users share the roadway.
- Appropriate where user demands and motor vehicle speeds are very low or when severe constraints limit the feasibility of providing separate accommodation.

Source: MassHighway

Harwich Bike Study | Proposed Conditions: Pedestrian and Bike Facilities



Sharrow



Multi-use Path



Widened Shoulder



Sidewalk

Types of Alternatives

For bicycle and pedestrian accommodation, there are a few general strategies to consider:

1. **Multi-Use Path.** Similar to the Cape Cod Rail Trail, a multi-use path is constructed separately from the roadway. The path is usually a minimum ten feet wide and constructed from bituminous (asphalt) pavement. Bikers, walkers and other users enjoy a high-level of comfort and safety and operate in two directions. An additional five feet is recommended to accommodate landscaping, decorative trees, and meander of the path layout.
2. **Sidewalk.** With a minimum of three feet of 'traveled way' (additional width is required for roadside features such as mailboxes, street signs etc.), this paved surface mainly provides accommodation for pedestrians and is separated from the roadway by a vertical curb or the distance of a landscaped strip. Current laws allow for bicycle use, however bicyclists are required to yield to pedestrians and oncoming cyclists must usually stop to pass. To accommodate street furniture (e.g., signs, utility poles, etc.) the total sidewalk width is typically four to five feet wide.
3. **Shoulder.** Shoulders are used by pedestrians and cyclists in the absence of other accommodation. MassDOT requires four-foot wide shoulders for bicycle accommodation.
4. **Share the Road.** This technique relies primarily on information and education and is only appropriate in certain circumstances (lower speed/lower volume roadways). Share the Road primarily includes identifying signage (usually with iconic signage showing pedestrian, bicycle, and automobile) and "Share the Road" as the message. On busier roads an additional pavement marking, known as the "Sharrow" is installed at regular intervals. The Sharrow is used to reinforce the Share the Road message and has the additional benefit of giving both the motorist and the bicyclist the visual cue of the correct positioning of the bicycle in the lane. This reduces the chances of cyclists being "squeezed" off of the road.

For bicycle/pedestrian information, alternatives include:

- Informational kiosks w/maps etc.
- Designated routes (shown on maps and signed at roadway intersections)

Public Transportation Alternatives include:

- Coordinated wayfinding signage to locate bus stops
- Bus shelter installation at key nodes
- Work with the town and the Cape Cod RTA to improve service (frequency, daily duration, connections to key destinations)

The following section provides detailed information to use in developing a wayfinding plan.

Harwich Wayfinding

As part of ongoing planning for the revitalization of Harwich Center and in effort to connect points of Harwich to the Cape Cod Rail Trail Old Colony spur, the town of Harwich requested technical assistance from the Cape Cod Commission to begin development of a wayfinding plan.

This section of the report is intended to provide a summary of wayfinding standards, design specifications for wayfinding kiosks and conceptual site plans for placement of signage. The proposed signage program could be integrated into a regional signage plan for the Cape Cod Rail Trail moving forward.

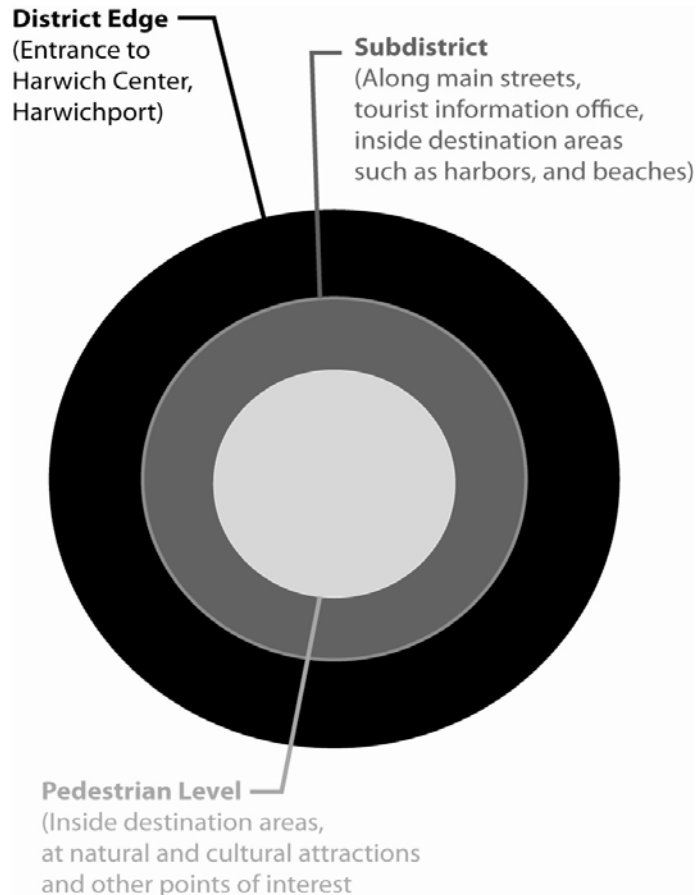
ESTABLISHING A WAYFINDING PROGRAM

Wayfinding plans provide visual aid to direct visitors between destinations and spaces; they should not only be attractive, but also a cohesive part of the community identity with an intention of giving the visitor visual cues that they are in a specific place. Wayfinding should be oriented to residents familiar with the landscape as well as visitors new to a community.

The common method for establishing wayfinding signs is to use a hierarchy of community elements to direct the motorist, pedestrian or bicyclist to their eventual destination without using an excessive amount of signs. This “peeling the onion” approach to planning has been effective in creating plans throughout the globe.

WAYFINDING IN HARWICH

Currently, Harwich has a partial collection of directional signs. Many of these signs are appropriate and helpful to the visitor; however, a fully integrated wayfinding program would incorporate these signs into a interconnected system to help visitors successfully navigate in potentially unfamiliar surroundings. Signage should be designed to indicate a sense of place. This report gives examples of potential signage types; it is recommended moving forward that the town work with a graphic designer to develop actual design standards. A potential signage hierarchy & placement in Harwich would include:



District Edges

The following examples could be located at natural entrances to Harwich Center and Harwichport.

Direct to: Smaller sub-districts, major landmarks (i.e.: Harbors, Beach, Parks, Main Street).

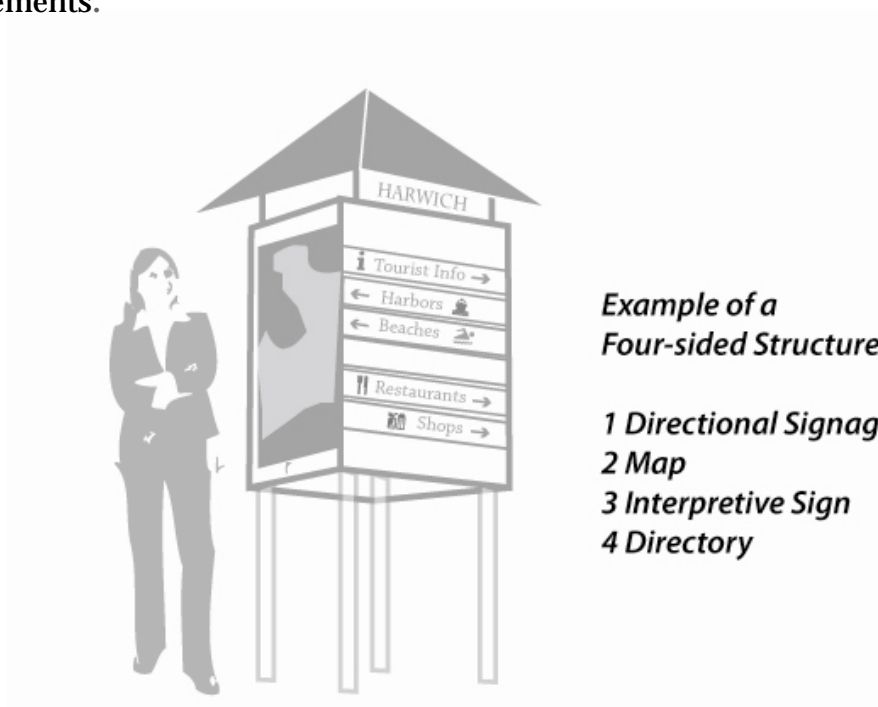
District Edge Signage could include:

Directional Signage: Routes pedestrian or vehicular traffic. Should have no more than 4 important destinations listed (i.e.: “Tourist Information”, “Shopping”, “Harbor/Beach”).



Example of directional signage

Wayfinding Kiosks: Small structure located at pedestrian based connections. May have 1-4 panels of information including directional signage, maps, interpretive signs or advertisements.



**Example of a
Four-sided Structure:**

**1 Directional Signage
2 Map
3 Interpretive Sign
4 Directory**

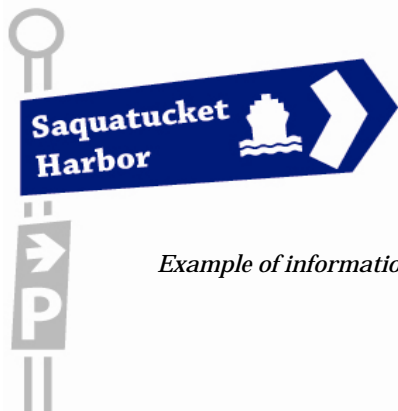
Inside Subdistrict

The following examples could be sited along main streets, at the tourist information office and inside destination areas such as harbors and beaches.

Direct to: Larger destinations and parking.

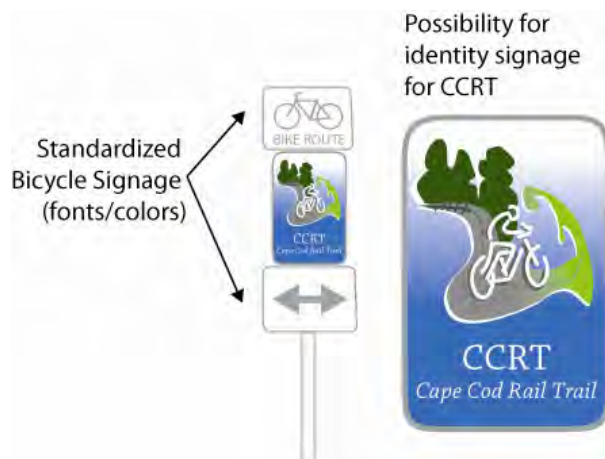
Subdistrict signage could include:

Informational and parking signage: Routes pedestrian or vehicular traffic. Design should be clearly recognizable, message content should be simple. If symbols used, they should be those that are internationally recognized.



Example of informational and parking signs

Logo Trailblazers: Signs for Rail Trail, nature trails or waterfront boardwalks. Should be distinctive, yet keeping with the design scheme of the overall signage plan.



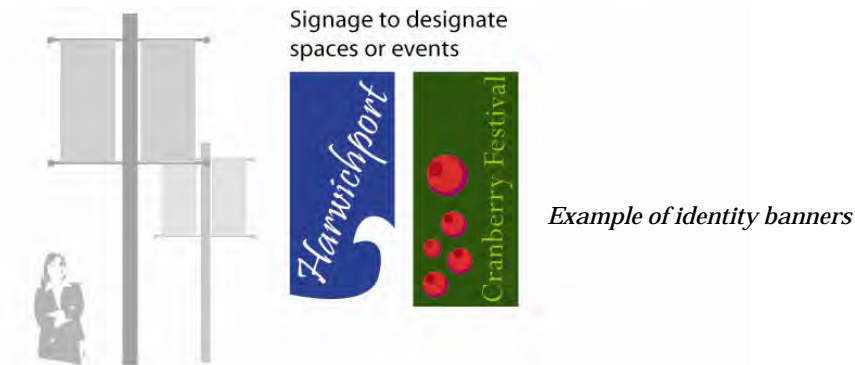
Example of Logo Trailblazer concept

Pedestrian Level

The following examples could be located inside destination areas, at natural and cultural attractions and at other points of interest. Any or all of these examples can be combined into a wayfinding kiosk at appropriate pedestrian connection points.

Direct to: Points of Interest.

Identity Banners/Signs: Decorative flags or banners (usually affixed to lightposts or poles) which designate a place, exhibition, or event. Can be easily replaced to vary the pedestrian experience.



Interpretive Signage: Interpretive information about specific local attractions (cultural or natural). Interpretive signs can be highly illustrative and can be more distinctive than other signs in the overall wayfinding plan.



Maps/Directories: These signs offer visitors an overview of their surroundings in the form of comprehensive site maps and directories. Most maps show a 'you are here' indicator. Outdoor maps show boundaries of an area, entry points, major buildings and pertinent sites. Maps should be simplified for clarity of use. For districts with a high rate of turnover, establishments can be assigned a letter/number, and listed on a replaceable directory as part of a kiosk.



Example of map signage currently in use in Harwich (photo: Michael Tuttle)

PLACEMENT OF SIGNS

See Attached Map of possible signage locations and types.

INDUSTRY SIGNAGE STANDARDS

For wayfinding to function as its intended, it must display useful information, be placed at an accessible point at a proper viewing height, and be adequately illuminated. Additional considerations include:

Typeface

Typefaces on directional, informational, and logo trailblazing signs, as well as main points that should be viewed at a distance from interpretive signs and maps, should be at a minimum 3 inches in height. Letter styles should be simple and avoid flourishes. Text which includes a mixture of capital letters and lowercase is more readable than text in all caps. Text must contrast clearly against the background. The demands of the aging eye especially need clear text styles including fonts such as Helvetica (a sans serif), and Garamond (a serif, more easily read for blocks of text).

Color

Foreground and background colors should contrast to ensure readability. Darker colors work best for backgrounds. Limit the number of different colors on general signage to 3-4. On interpretive signs and maps, a good rule of thumb is to have at most 8-9 colors in text, legend, or design elements.

Bicycle signs are standardized to adhere to certain color standards:

Yellow = warning

Green = guiding signs

Red, White, Black = Regulatory signs

The mixing or misusing of these sign types can lead to confusion for bikers accustomed to a signage standard. In order to incorporate a standardized bicycle sign into a wayfinding program, 'Logo trailblazer' signs could be matched with appropriate guiding signs. *At the time of this publication, CCRTA is considering a Cape-wide bicycle signage plan.*

Symbols and Logos

Internationally recognized symbols are best to use, such as "P" for parking or "H" for hospital (see attached for examples). Logos should be kept small and should not compete with the message on a sign. Logos for districts or subdistricts should be used in conjunction with a text message.



Example of directional sign integrating logo & text

MATERIALS & FABRICATION

Panel Height: Signs must be 7' from ground to satisfy ADA requirements. For interpretive signs, panels should be positioned to be easily readable.

Width: Generally 40" or less.

Horizontal Clearance: Panels should be at least 12" from street curbs to accommodate vehicles turning in parking areas.

Materials:

Standard bicycle signage is fabricated of powder coated steel from transportation sign fabricators. For larger signage, such as interpretive signs and maps shown on a scale of 18"x24", 24"x36" up to 40" in width, materials include:

- HPL (High Pressure Laminate) where high resolution prints are laminated under high pressure
- Polycarbonate/Aluminum Composite

- Fiberglass embedded Inkjet
- Porcelain Enamel, where graphics are molecularly fused to porcelain enamel (the most durable and expensive option).
- Additionally, the use of glass encased bulletin boards is often used for areas where signage is frequently changed. Signage materials can be produced stand alone and shipped for inclusion in a self-made stand, or fabricated to fit into bases to be installed by the buyer.

Depending on the design, signs can be designed by a graphic artist with print-ready files sent directly to the sign fabricator.

Exhibit Bases:

Bases and kiosks to hold sign panels must be sturdy and weather-resistant, made from materials such as powder-coated or Corten steel, treated wood or recycled plastic composite. Breakaway footers (which secure posts to concrete footings with bolts) are recommended, for their intrinsic replaceability if outdated, damaged or vandalized.

MAINTENANCE

Vandalism of sign panels is a common occurrence - Approximately 3-5% of elements in a wayfinding program are damaged or destroyed every year – therefore wayfinding plans should develop ongoing maintenance and replacement programs. Additionally, prevention measures which can be put into place to deter vandals include placing signage at a height that is difficult for vandals to reach, or and choosing a signage material that does not easily scratch and can be easily cleaned (HPL or porcelain).

SOURCES CONSULTED FOR WAYFINDING PLANNING:

American Planning Association, 2006. *Planning and Urban Design Standards*.

Berger, C. 2009. *Wayfinding: Designing and Implementing Graphic Navigational Systems*.

City of Cheyenne, 2008. *Cheyenne MPO Wayfinding Plan*.

Gibson, D. 2009. *The Wayfinding Handbook: Information Design for Public Spaces*.

Nini, P. 2006. *Typography and the Aging Eye: Typeface Legibility for Older Viewers with Vision Problems*.

Harwich
Road Study
Wayfinding &
Amenities

Legend

- Cape Cod Rail Trail
- Potential Viewing Platform
- Directional Signage
- Wayfinding Kiosk
- Informational/Parking Signage
- Logo Trailblazers
- Identity Banners/Signage
- Interpretive Signage
- Maps/Directories



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Created by: TH
Reviewed By: GC
Source CCC GIS ArcMap
9.3.1; modified with CS4
Modified 12/29/10

The information depicted on these maps is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel level analysis. It should not substitute for actual on-site survey, or supersede deed research.

PEDESTRIAN/BICYCLE/SHUTTLE BUS SERVICE PLAN RECOMMENDATIONS

The Cape Cod Commission staff has compiled all pertinent data on existing conditions, alternative development, and alternative in this report. Potential recommendations (summarized in the Table 2 and Table 3 and following figures titled: “Phase I” and Future Phases”) include:

Multi-use Path

- Connection from Cape Cod Rail Trail-Chatham Spur through Thompson Field & Harwich Water Department property to Chatham Road/Long Road intersection.
- Along Lothrop Road from the Cape Cod Rail Trail to Route 28
- Along Earle Road from Lower County road to the town beach to the south

Sidewalks

Maintain, upgrade, or install as required sidewalks along the following roadways:

- Bank Street
- Route 28
- Julien Road
- Old Wharf Road
- Main Street (minimum from South St to Bank Street)

Share the Road

Include “Share the Road” signage and consider “Sharrow” pavement markings on the following roads:

- Bank Street (from Route 39 to Route 28)
- Forest Street (all)
- Bells Neck Road (from North Road to Sand Pond)
- Lothrop Road (from Great Western Road to Route 28)
- Gilbert Rd (from Lothrop Rd to South St)
- Parallel St (from South St to Bank St)
- Oliver Snow Rd (from Chatham Rd to Gorham Rd)
- Gorham Rd (from Oliver Snow Rd to Route 28)

Designated Bike Routes:

To be shown on maps installed in kiosks with on-road signage. Each route should be signed appropriately in each direction (e.g., using smaller bike route signs). Routes are defined by end points and paths along roadways and a listed here from west to east.

1st Route - Cape Cod Rail Trail to Earle Road Beach (via Lothrop Ave & Earle Road).

2nd Route - Old Colony Rail Trail – Bank Street Beach (via Island Pond Road, Forest Road, Pleasant Street – connect to 3rd route at Bank Street)

3rd Route - Harwich Center/Town Hall – Bank Street Beach (via Bank Street)

4th Route – Old Colony Rail Trail – Saquatucket Harbor (via Long Rd, Oliver Snow rd, Gorham Rd).

Also consider routing to Red River Beach

Identify Walking Paths

To be shown on kiosk maps. These can provide pedestrian and limited bicycle access:

- North Street (from Bells Neck to Route 28)
- Thompson's Field (from Route 39 to Chatham Road)

Multi-modal Hub at Saquatucket Harbor

Transit/Bike/Pedestrian Hub at Route 28/Saquatucket Harbor/Gorham Rd

- Construct CCRTA bus shelter
- Kiosk maps/info
- Benches/amenities
- Bike racks

Redesignating Roadways

Consider converting 2-way traffic flow to 1-way traffic flow. Use new available width for bicycle/pedestrian accommodations. May be implemented on seasonal basis.

- Forest Street

Table 2 - Recommendations (Phase I)

Project # /Location	Purpose	Construction Type	Funding	Next Steps	Sched- ule
[1] Bank Street – Route 39 (Harwich Center) to Route 28 (Harwich Port)	Main pedestrian link between Harwich Center and Harwich Port – suitable for walkers and slow-speed bikers (children, elders, etc.); part of Harwich Center/Harwich Port walking loop. Other accommodations for faster bikers.	Reconstruct as needed to establish curbed or separated 5-foot wide sidewalk on west side. Consider a wider shoulder, share-the-road designation or other improvements (widen sidewalk to multi-use path)	Local – Capital Outlay, DRI mitigation, Planning Board sidewalk fund, etc.	Public Works Dept. to determine required level of survey and design work; begin construction	2011-2013
[2] Route 28, Snow Inn Road to Julien Road (or to Old County Road)	Provide sidewalks/bike path from Harwich Port to Saquatucket Harbor and to road leading to Red River Beach	Sidewalk	TBD	Contact MassDOT; explore construction and funding options; get project on TIP list	Begin in 2011
[3] Earle Road, Lower County Road to Earle Road Beach	Provide off-road connection from Lower County Road to the beach on available Town property	Construct facility ranging from 5' wide sidewalk to 10' multiuse path	Local	Public Works Dept. to design and construct	2011
[4] Old Colony Rail Trail to Chatham Road/Long Road intersection	Connect rail trail in the direction of Saquatucket Harbor	Separated 10' wide asphalt path across Thompson Field and/or Water Dept. property; "share-the-road" along Long Road, Oliver Snow Road & Gorham Road	Local - CPC	Work with Water Dept and Recreation and Youth Dept regarding path location	2012-2014
[5] Bike/pedestrian trail network maps	Prepare/distribute trails maps for bikers and pedestrians – describe Harwich-wide bicycle/pedestrian trails	Bicycle/pedestrian trail maps	Local – CPC	Layout bike/ped routes including above projects	Prepare maps for printing in 2011

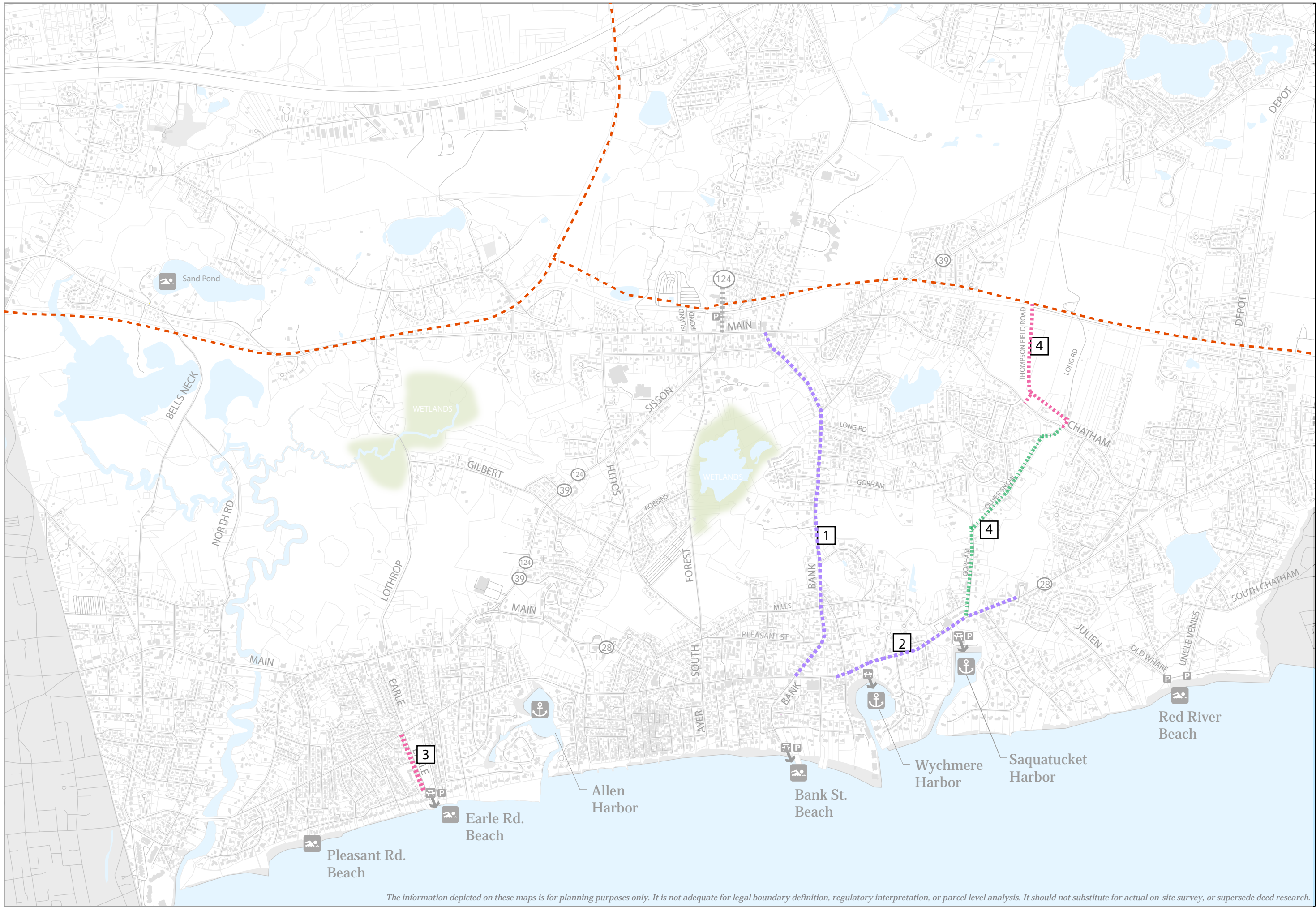
Harwich
Bike Study
Phase I

Legend

- Existing Cape Cod Rail Trail
- Proposed Share the Road
- Proposed Sidewalk
- Proposed Dedicated 10' Multi-Use Path
- # Project Number



Created by: TH
Reviewed By: LM
Source CCC GIS ArcMap 9.3.1; modified with CS4
Modified 1/13/11



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Table 3 - Recommendations (Future Phases)

Project # /Location	Purpose	Construction Type	Funding	Next Steps	Sche- dule
[6] Forest Street, Main Street to South Street	Share the road facility for bikers and walkers with connection via Island Pond Road to Old Colony Rail Trail	Signage and pavement markings only. Consider seasonal 1-way traffic flow	Operating funds	Determine signage and pavement marking details	2012
[7] Bank Street, Route 28 to Bank Street Beach	Provide safe pedestrian route to the beach. Extend existing sidewalks on Route 28 and Bank Street	Construct curbed 4 or 5' wide sidewalk on one side – may be a combination of east and west sides	Local – Capital Outlay, DRI mitigation, Planning Board sidewalk fund, etc.	Public Works Dept. to determine required level of survey and design work; begin construction	2013-2014
[8] South Street, Forest Street to Sisson Road	Completion of Harwich Center/Harwich Port sidewalk loop - suitable for walkers and low-speed bikers; share-the-road facility for bikers	5-foot wide sidewalk on one side	Local	Do survey to determine right-of-way availability	2012 to 2015
[9] Lothrop Road, Cape Cod Rail Trail to Route 28	Extend rail trail to Route 28 and beaches	Separated 10' wide asphalt path	Enhancement grant or other external source	Explore grant availability; determine wetland impacts	Begin in 2011; likely 5-year project or longer
[10] Earle Road, Route 28 to Lower County Road	Link to above bike path via share the road designation on Earle Road between Lower County Road and Route 28	Signage and pavement markings only	Local – Capital Outlay, sidewalk mitigation, etc	Wait until outcome of #9	TBD
[11] Balance of Route 28	Completion of sidewalk route from Dennis Town Line to Chatham Town Line		TBD	Contact Mass DOT; explore construction & funding options; get project on TIP list	TBD
[12] Grass Pond	Provide conservation viewing station in wetland/marsh area connected to Forest St via gravel path or boardwalk		Local – CPC	Follow Forest Street improvements; determine location & type of facility	2012 to 2015

Harwich
Bike Study
Future Phases

Legend

- Existing Cape Cod Rail Trail
- Proposed Share the Road
- Proposed Sidewalk
- Proposed Dedicated 10' Multi-Use Path
- Potential Viewing Platform
- Project Number



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