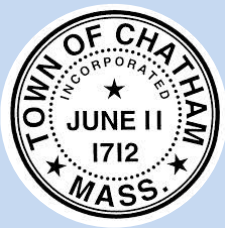


Town of Chatham

Bicycle Master Plan



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December, 2017

ACKNOWLEDGEMENTS

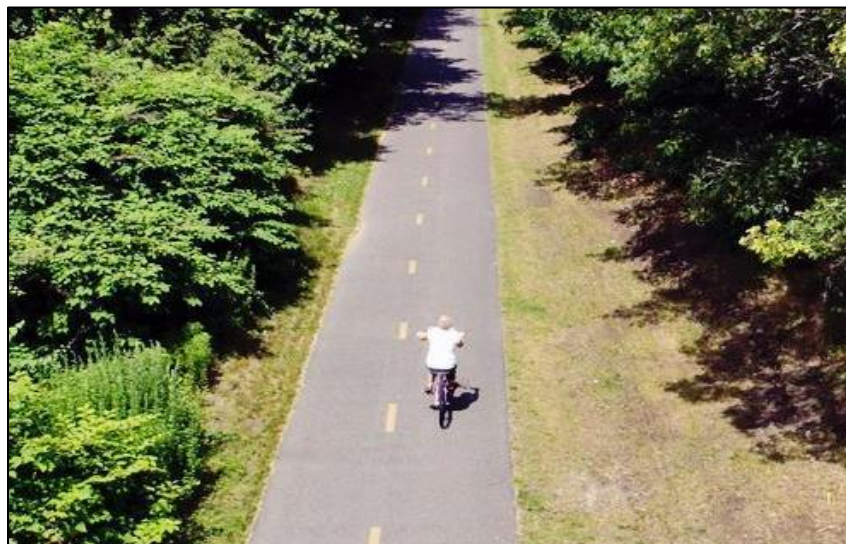
Prepared by David Nolan Jr, Transportation Planner, of the Cape Cod Commission in cooperation with the Town of Chatham and the Massachusetts Department of Transportation (MassDOT)

This report was funded in part through grants from the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), United States Department of Transportation (USDOT). The views and opinions of the Cape Cod Metropolitan Planning Organization (MPO) expressed herein do not necessarily state or reflect those of the USDOT.

The Bikeways Committee was formed in the fall of 2003 to serve as an advisory committee to the Board of Selectmen and was given the following charge:

- 1. To advise, in concert with the Town's public safety officials, on the creation of rules and regulations governing the use of the Town's Bike Paths with emphasis on safety and security.*
- 2. To advise on the physical implementation of those rules and regulations via signage, markings, bike racks and security both on the Trail and within the Town.*
- 3. To advise and recommend on additional local Trail connections via dedicated trails or share the road access.*
- 4. To advise and recommend on connections to other towns.*
- 5. To maintain bicycle safety and education programs in both the community and the schools.*
- 6. To represent Chatham at meetings with other regional Bike Path groups.*

The Chatham Bikeways Committee, consisting of citizen volunteers widely experienced in bicycling, transportation, and educational issues, contributed immeasurably to this Plan. They are John O'Toole (Chair), David Widing, Randi Potash, Steve Wardle, Doug Nichols, and Brad Bivens. Assistance from Tom Temple, DPW Director, was also critical. More information is available at <https://www.chatham-ma.gov/bikeways-committee>





Executive Summary

The 2017 Chatham Bike Plan is a result of collaboration between the Town of Chatham's Bikeways Committee and the transportation staff of the Cape Cod Commission.

Between 2012 and 2014, there were 10 reported crashes involving bicycles in Chatham with 6 of them being on Route 28. 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 to remedy, 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 Chatham Bikeways Committee states: "Thousands of visitors to Chatham have already discovered that exploring the area by bike can be both relaxing and exciting. Whether you're a professional cyclist, hobbyist or just looking to roll around town, you'll find plenty of opportunities in Chatham."

Goals:

- To engineer the infrastructure of Chatham 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 need to be 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. To make bicycling an integral and appreciated part of the community culture.
- To foster safe, informed, and respectful interactions among people who walk, ride bicycles and drive cars on Chatham's roads and paths. Drivers and cyclists understand their respective responsibilities, and police support both through enforcement and education.



The following tables present a summary of recommendations developed by the committee to address bicycling needs in Chatham. Corresponding maps are shown in Figures 11 and 16. Estimated costs are listed when available from the Chatham DPW/Town Engineer or estimated by the Cape Cod Commission. Appendix C includes a table listing unit costs for reference.

Table 1 – List of Recommended Projects

Location	Description	Responsibility	Cost x \$1,000
Crowell Rd @Tip Cart Dr intersection at OCRT terminus	Solar-powered crossing lights, improve signage, delineate curb along Crowell to reduce crashes; one female bicyclist informed the Bikeways Committee in July that she was injured in this area and Bikeways Committee has heard reports from Chatham Boat Company staff of other mishaps and minor injuries at this location	Town	30
Route 28 @ Queen Anne Rd @ Crowell Rd	Addition of bike lanes on the feeder roads to Route 28, with the addition of crosswalks and bike signage	Town	750
Route 28 between Stony Hill Rd & Old Harbor Rd	Widening of shoulders and/or sidewalks. Intersection upgrades including crosswalks & wayfinding signage	MassDOT	250
Chatham Bars Ave	Establish a bike connection from Scenic Bike Route to Downtown Chatham via Chatham Bars Ave. Wayfinding signage and/or Sharrows would be appropriate	Town	2
Sam Ryder Rd	Share the road accommodations along Sam Ryder Rd through the installation of wayfinding signage and Sharrows	Town	3
Route 28 @ Stony Hill Rd	Updated crossing at intersection as well as wayfinding signage indicating Scenic Bike Route	MassDOT	2
Kate Gould Park	Signage indicating Kate Gould Park as a destination for bicyclists looking to access Downtown Chatham. Signage	Town	2



	and updated bike racks are necessary		
Route 137/Morton Rd	Construction of bike lanes or wide sidewalks along Route 137 until Morton Rd to connect to the OCRT and Route 28 [1.6 miles]	Town/ MassDOT	800
George Ryder Rd	Extend existing bike lanes to and from the OCRT Route 28 [.2 miles to Route 28]. Motion activated warning light at cross over point to OCRT	Town	150
Hitching Post Rd @ Depot Rd	Connect OCRT terminus to Downtown Chatham. Add signage to guide bicyclists from Depot Rd to Downtown [Depot Rd to Old Harbor to Highland to Seaview]	Town	5
Morris Island Rd	Share the road accommodations including Sharrows and wayfinding signage	Town	2
Stage Harbor Rd	Designate the 350 feet from Pond St to the municipal lot as a bike route with wayfinding signage and/or Sharrows	Town	2
Stage Harbor Rd Municipal Lot	Signage indicating the lot as a destination for bicyclists looking to access Downtown Chatham. Signage and updated bike racks are necessary	Town	1
Harding's Beach Rd	Improve pavement markings and wayfinding signage to the beach	Town	2
Barn Hill Rd	Implement wayfinding signage at the intersection of Route 28 as well as along the existing multi-use path	Town	2
Ridgevale Rd	Share the road accommodations including Sharrows and wayfinding signage	Town	2



Cockle Cove Rd	Share the road accommodations including Sharrows and wayfinding signage	Town	2
Forest Beach Rd	Share the road accommodations including Sharrows and wayfinding signage	Town	2
Pleasant St	Share the road accommodations including Sharrows and wayfinding signage	Town	2
Crowell Rd @ Lake St	Additional wayfinding signage indicating direction of scenic bike route	Town	.3
Stony Hill Rd @ Lake St	Additional wayfinding signage indicating direction of scenic bike route	Town	.3
Queen Anne Rd @ Stepping Stones Rd @ Wilfred Rd	Improved crossing with solar activated lights and wayfinding signage	Town	21
Wilfred Rd	Increase signage along road as well as adding Sharrows to pavement	Town	4
OCRT crossing @ Route 137	Pull off area with Fix-It station, map kiosk and other amenities. Rapid flash beacons for a more updated crossing	Town	30
Old Queen Anne Rd	Widen shoulders for bicycle lanes or a widened sidewalk [2.6 miles]	Town	1,300



Table 2 - Ongoing/Annual Recommendations

Location	Description
Old Colony Rail Trail maintenance	Add maintenance line item to annual DPW budget
Town-wide - Road resurfacing projects	Narrow travel lanes to calm traffic, and increase shoulder width to accommodate non-motorized transport
Town-wide – Bicycle safety signage and sharrows	Include “Bicycles may use full lane” signage and pavement markings on roads (esp. at sharp curves and where bike shoulders/lanes do not exist)
Town-wide – Multi-Use Paths	Consider creation of multi-use paths
Town-wide - Education	Bicycling education program (see text of report)
Chatham Police Department	Work with Chatham P.D. for improved enforcement of speed limits, road sharing rules, crosswalk usage, oversight of Old Colony Rail Trail
Town wide - sand removal	Remove sand from shoulders
Town wide – bike racks	Install bike racks at locations throughout town
Town-wide – Wayfinding Signage	Install wayfinding signs throughout town to guide cyclists to points of interest and best routes

Strengthening Chatham’s bicycling environment and realizing the comprehensive vision of this Plan depends upon commitments by the Town and multiple supporting partners, both governmental and private. The Plan includes recommended actions for implementing the engineering, education, and enforcement priorities identified by the committee.



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Introduction/Background

As part of an effort to enhance the quality of life through the promotion of alternative modes of travel, Chatham is seeking to provide safe and effective bicycle facilities to all parts of town. This includes planning for the most appropriate ways in which to accommodate cycling within the overall transportation system for those who ride bicycles to safely, conveniently, and comfortably access every destination within the town. Chatham is fortunate to have the Old Colony Rail Trail (OCRT), a destination in itself for tourists and locals alike. Creating safe and effective links between the villages of Chatham, the OCRT, and other important destinations in town is a high priority in the Chatham Bike Plan. The Cape Cod Commission endorses and supports the development of bike routes/trails throughout Chatham in an effort to connect all the downtowns and villages of Cape Cod through bicycle access.



Figure 1 - Along the Old Colony Rail Trail in Chatham

STUDY GOALS

As part of an effort to enhance economic development, the Town of Chatham is seeking to provide safe and effective bicycle facilities between the Old Colony Rail Trail, Route 28, the downtown center and other important destinations, and to provide links to Cape Cod's growing network of designated bicycle routes, including the Cape Cod Rail Trail.

The Cape Cod Commission has conducted a bicycle facilities planning study in coordination with the Chatham Bikeway Committee for the Town of Chatham with the following study goals:

- Identify safe and effective bicycle access between the Old Colony Rail Trail and the villages of Chatham and downtown Chatham

- Identify safe and effective bicycle access along Route 28 to and from downtown Chatham.
- Identify safe and effective bicycle access between the Old Colony Rail Trail and the beaches of South Chatham and West Chatham.
- Identify safe and effective bicycle access between the Old Colony Rail Trail and Lighthouse Beach and the National Fish and Wildlife site.
- Identify safe and attractive bicycle routes to and from North Chatham.
- Reestablish the Scenic On-Road Bike Route.
- Coordinate this planning effort with the Regional Transportation Plan and the Cape Cod Bike Plan

BACKGROUND

The Cape Cod Commission, serving as the regional planning agency for the fifteen towns on Cape Cod, has reviewed transportation issues at many locations over the years during various planning activities, including the Regional Transportation Plan, the Transportation Improvement Program, and Developments of Regional Impact, considering the existing safety issues and potential improvements.



Figure 2 - Along Main Street near Chatham Lighthouse and Lighthouse Beach

According to the United States 2010 Census, Chatham has an estimated population of 6,125, making it the 10th most populous town in Barnstable County. Chatham also ranks 10th in employment with 2,774 employees according to the U.S. Bureau of Labor Statistics.

During the development of this study, the Town of Chatham has been partnering with MassDOT on the “Crowell Road Intersection Improvement Project” to address the following issues the intersection currently faces. Issues being addressed in this effort include:

- Enhance safety for all modes of travel



- Adding bicycle and pedestrian accommodations
- Improving drainage
- Enhancing streetscape
- Rationalizing vehicular access to abutting properties

Members of the Chatham Bikeways Committee will continue to monitor this project to ensure bicycle and pedestrian accommodations are included in this project's scope.



Figure 3 – Crowell Road intersection

BIKEWAYS IN CHATHAM

As a starting point, the town of Chatham has produced a bikeways map (shown in appendix A). More detail can be seen by viewing of the map from the Town of Chatham's website: <http://www.capecodbikeguide.com/pdf/OCRT-Chatham.pdf>

The map shows many points of interest including:

- Beaches
- Restaurants
- Shopping Centers
- Lighthouse
- Parks/Playgrounds
- Parking
- Restrooms



Bikeways include:

- Old Colony Rail Trail (OCRT)
- Share the Road Portion (OCRT)
- Scenic On-Road Bike Route

Also, included in appendix A is a trail map found at various kiosk locations throughout Chatham



Figure 4 - Bicyclist riding along Share the Road portion of Scenic Bike Route



Figure 5 – Along the Old Colony Rail Trail in Chatham



BICYCLE CRASH HISTORY

According to the most recently available 3-year period (2012-2014) crash records provided by MassDOT, there were 225 crashes of all types reported for the town of Chatham.

Of these 225 crashes, ten were reported to include bicyclists. All ten of the reports included location information as shown in the following figure. One of the bicycle crashes was “property damage only”, and nine involved injuries. No fatalities were reported.

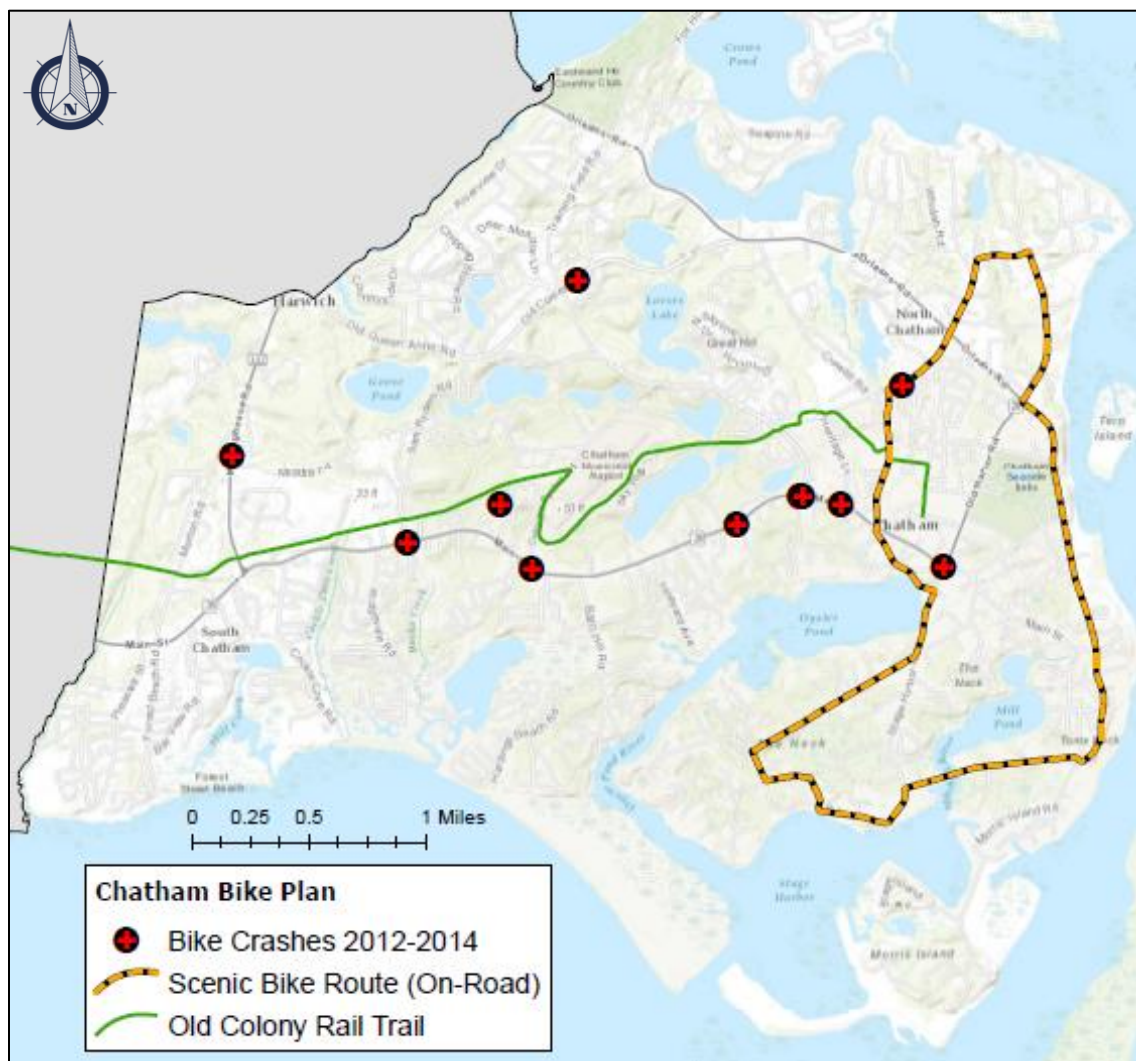


Figure 6 - Reported Bicyclist Crashes
Based on MassDOT Crash Reports 2012-2014



Problem Identification – Bicycle Routing

The Town of Chatham Bicycle Master Plan is the product of extensive work and partnership between the Cape Cod Commission and Chatham Bikeways Committee, which seeks to make the town a safe and enjoyable place for bicyclists. In the summer of 2017 the Chatham Bikeways Committee with the support of Commission staff identified possible bike routes (mostly on-road), bicycling destinations, areas of opportunity, and some possible countermeasures in these areas. The vehicle volumes of the desired routes were identified, and in all cases the routes were identified to be “areas of opportunity.” This information is presented in the maps on the following pages and is summarized in the following sections.

In early fall 2017 The Chatham Bikeways Committee and Cape Cod Commission reached a milestone as they worked to advance a new bike transportation plan for the town. At an October 5th, 2017 meeting at the Town Annex, the Bikeways Committee and staff from the Cape Cod Commission presented the draft plan’s highlights and gathered input from public participants in attendance. The draft plan focused on the desired routes and areas of opportunity as well as potential enhancements and beneficial actions in all areas of Chatham. Attendees were given a handout with all the areas of opportunities listed with comments about the location and the potential countermeasures the Bikeways Committee and the Commission discussed. After the presentation, the Bikeways Committee and Commission staff led an active brainstorming session where the public was asked to offer their opinions on biking in Chatham. Participants were asked to identify, on maps, areas they like about Chatham regarding biking, areas they dislike, suggestions, and concerns/support over the desired routes and areas of opportunity that were previously presented.

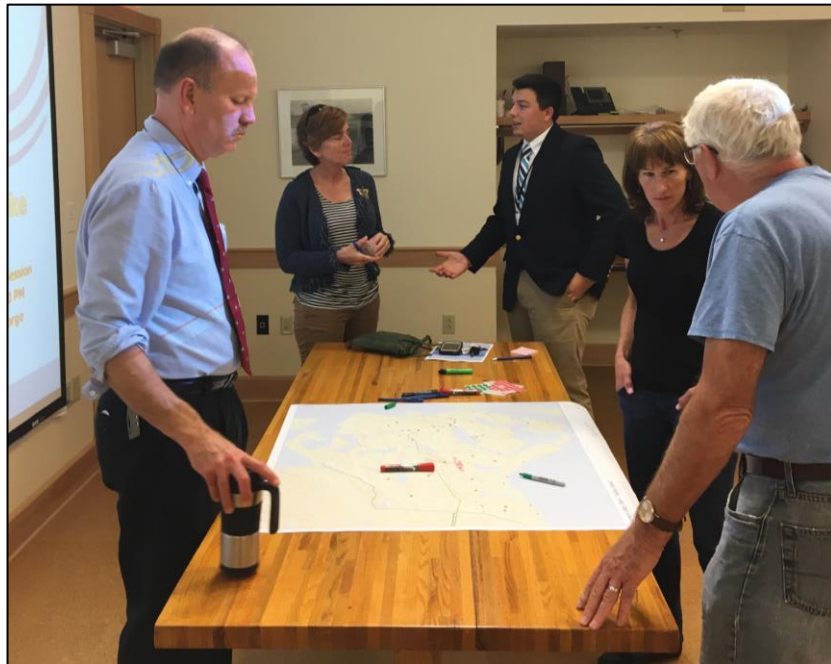


Figure 7 – Cape Cod Commission staff assist respondents during public meeting



Meeting participants, who spanned a range of age groups and bicycling skill sets, displayed a deep interest in improving bicycling conditions throughout town and provided a variety of constructive comments and questions. The public meeting represented a key step in a broader process, which includes finalizing the draft plan, presenting it to the Board of Selectmen for adoption, and, ultimately, using it to guide the town's public policy and budget decisions. At the meeting's conclusion, the public was encouraged to email any further comments to the Committee for consideration in the draft plan revisions, and to complete an online survey the Bikeways Committee was conducting.

After the October 2017 meeting, the Bikeways Committee created a list of potential projects based on the public comments as well as the initial areas of opportunity list.

Destinations

Dozens of destinations have been identified by the committee falling in the following categories:

- Schools
- Beaches/Ponds
- Piers/Ports
- Landmarks
- Municipal
- Educational
- Shopping areas
- Recreation center/sports fields/parks

Specific destinations within some of the major categories are as follows and are shown on the following map as a circular blue ● symbol.

Schools:

- Monomoy Regional Middle School
- Chatham Elementary School

- Chatham Kayak Company

Landmarks:

- Chatham Lighthouse/Scenic Overlook
- Morris Island
- Godfrey Windmill

Beaches/Ponds:

- Forest Beach
- Cockle Cove Beach
- Ridgevale Beach
- Harding's Beach
- Lighthouse Beach
- Andrew Harding Lane Beach
- Oyster Pond Beach
- Pleasant Street Beach

Municipal:

- Chatham Town Hall

Educational:

- Chatham Marconi Maritime Center
- National Fish & Wildlife Site

Piers/Ports:

- Chatham Fish Pier
- Ryders Cove Boatyard
- Outermost Harbor Marine
- Stage Harbor Yacht Club

Shopping Areas:

- West Chatham Commercial Center
- South Chatham Commercial Area
- Downtown Chatham

Recreation Centers/Sports Fields/Parks:

- Community Center
- Veterans Field
- Gould Park
- Volunteer Park

Routes

From the results of the October 2017 public meeting as well as through collaboration with the Cape Cod Commission, the Bikeways Committee has identified several desired bike routes throughout Chatham. The goal in mind for these routes is to provide connections throughout town and the region. These routes are shown on the following map as a green  line:

Problem Intersections

A number of locations where routes cross major roadways introduce difficulties to cyclists, usually because of higher-speed and heavier traffic. Other factors include lack of bicycle and pedestrian accommodations such as crossings and warning signs/lights. All the intersections that cross Route 28, as well as the Old Colony Rail Trail, and several other roads throughout town, are in need of consideration for blinking warning lights that can be activated by pedestrians and bicyclists to alert automobile drivers.



Figure 8 – Cyclists entering Old Colony Rail Trail from Crowell Road

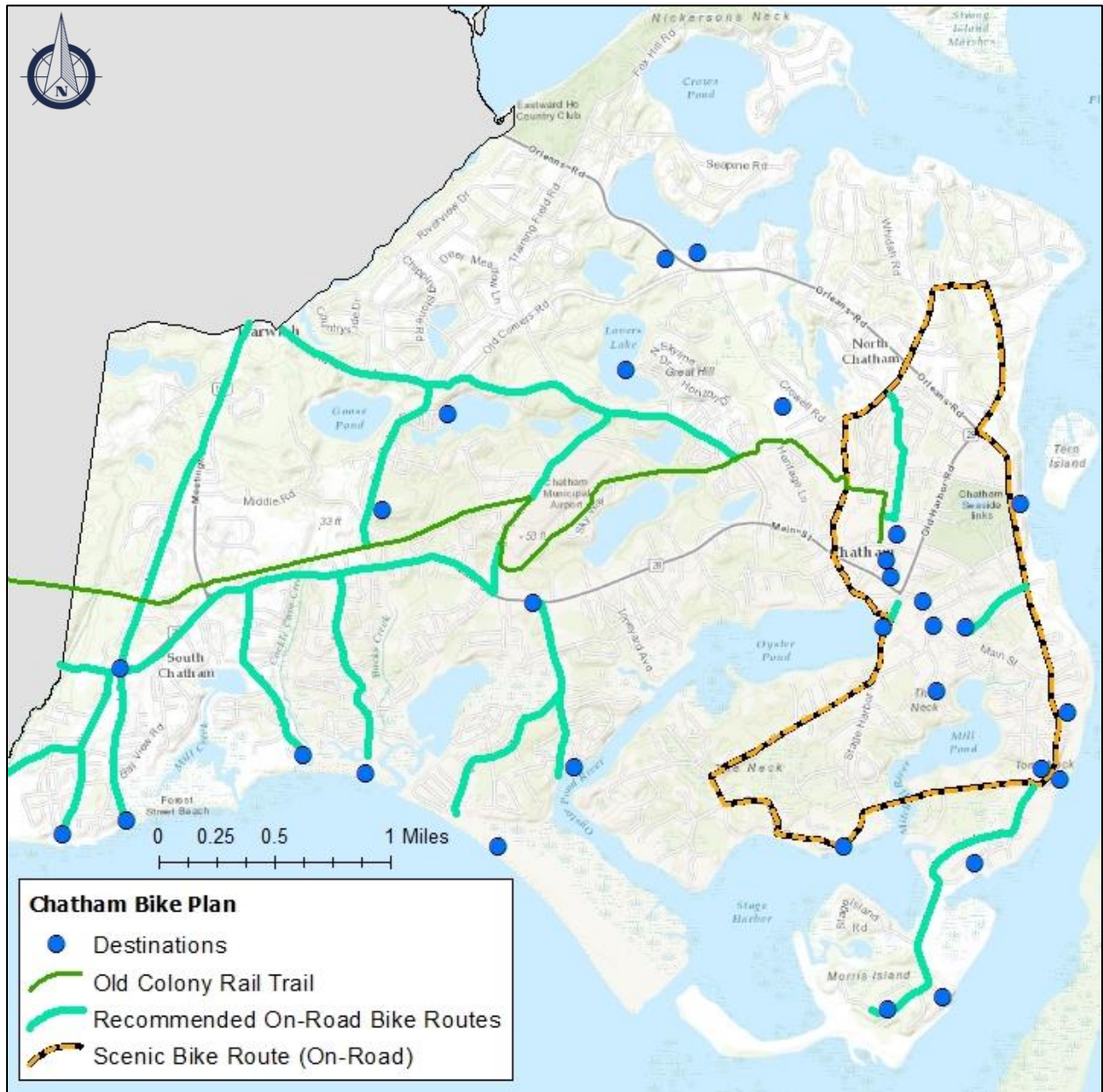


Figure 9 – Destinations and Desired Routes



The following figure shows a detailed view of the Destinations, Desired Routes and Municipal Parking Lots in the downtown area:

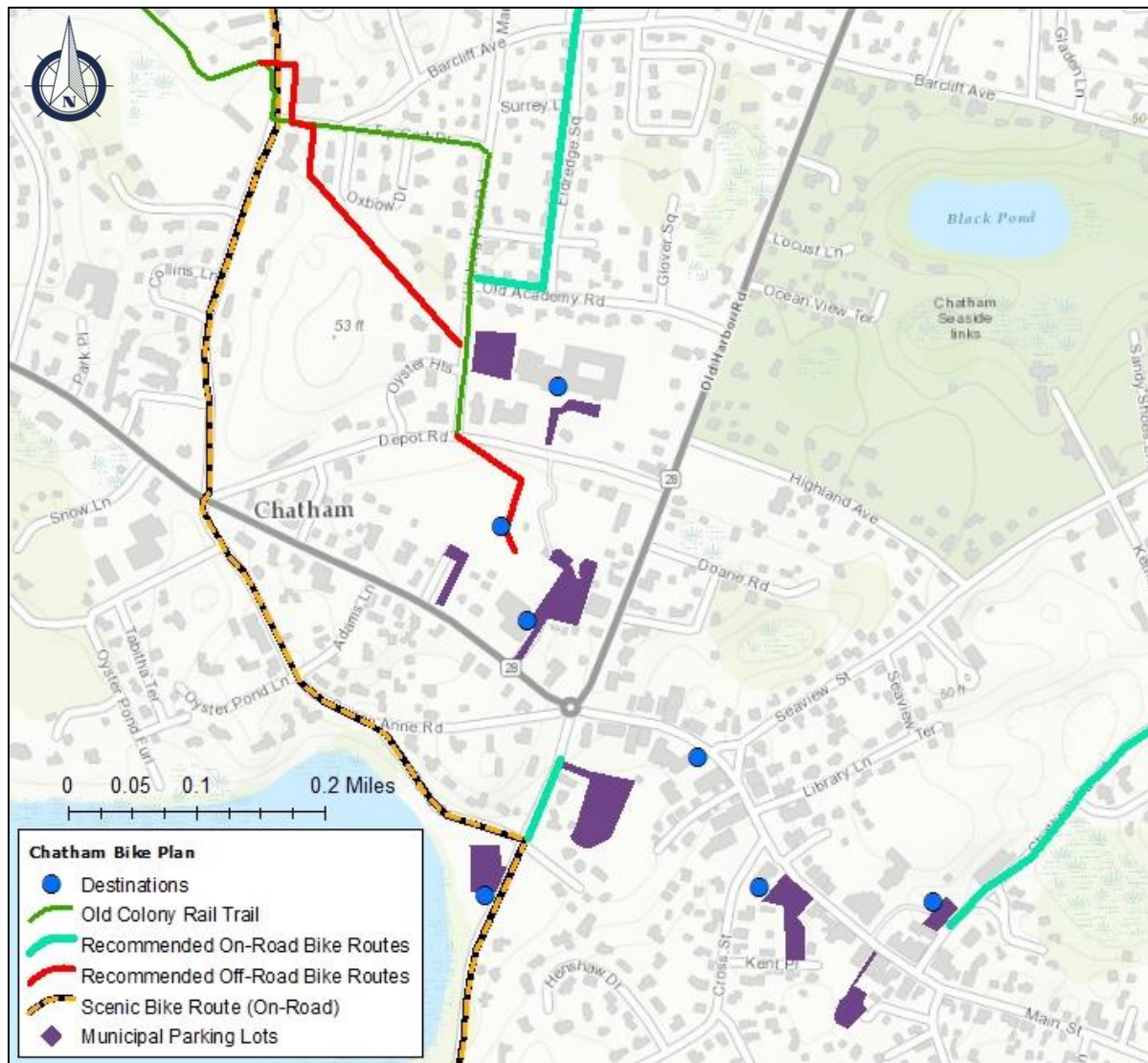


Figure 10 – Downtown Chatham Destinations, Desired Routes, and Municipal Parking Lots



Areas of Opportunity

Many of the desirable routes, and a few other roadways as well, have been classified by the Bikeways Committee as “areas of opportunity” due to lack of bicycle-accommodation (e.g., shoulders) combined with the potential solutions to these areas.

As part of efforts to identify difficult areas for bicyclists, the Chatham Bikeways Committee included a number of notes listed in Table 3 and identified on the following maps.

Table 3 – Areas of Opportunity Notes

Note #	Location	Comment	Potential Countermeasures
A	Crowell Rd. @ Tip Cart Dr. @ OCRT Entrance	High crash area for bikes, curb not clear enough to bikers.	Raised curbing, guardrail separating sidewalk and street
B	Chatham Bars Ave.	Potential connection to downtown/Main St. from North >800 vehicle/day	Bike shoulders/signage indicating downtown connection
C	Kate Gould Park Chatham Bars Ave.	Potential parking area for bikes accessing downtown/Main St.	Bike racks/clear signage
D	Stage Harbor Rd.	Potential connection to downtown/Main St. from West & South >3,000 vehicle/day	Signage indicating connection to downtown and parking lot
E	Stage Harbor Rd. municipal lot	Potential parking area for accessing downtown/Main St.	Bike racks/clear signage
F	Stony Hill Rd. @ Lake St	No sign indicating how to follow the Scenic Bike Route	Signage



G	Crowell Rd. @ Lake St.	No sign indicating how to follow the Scenic Bike Route (or how to access OCRT)	Signage
H	Route 28 @ Stony Hill Rd.	>8,000 vehicles/day No crosswalk or signal	Crosswalks/signage
I	Route 28 between Stony Hill Rd. & Old Harbor Rd	High speed traffic, heavy traffic, narrow sidewalks	Widen sidewalk/shoulder
J	Morris Island	Develop On-Road Bike Route to Morris Island	Signage indicating bike route.
K	Queen Anne Rd. @ Stepping Stones Rd. @ Wilfred Rd. @ OCRT	>6,000 vehicles/day	Clearer signage for bikes to follow OCRT down Wilfred Rd.
L	Hitching Post Rd. @ Depot Rd. (OCRT Terminus)	Potential extension of OCRT to the Chatham Recreation Center	Bike shoulders/lanes/signage. Connecting parking lot at Rec. Center with rail trail
M	Route 28 @ Queen Anne Rd. @ Crowell Rd.	>18,000 vehicles/day No curb cuts or pedestrian crossing signals. More signage needed to indicate what route to follow along Scenic Bike Route	Signage directing bikes to Queen Anne Rd. for downtown/Main St. access. Curb cuts
N	Ridgevale Rd.	>2,000 vehicles/day	Destination signage from OCRT, focus signs to beaches
O	Cockle Cove Rd.	>1,000 vehicles/day	Destination signage from OCRT, focus signs to beaches
P	Forest Beach Rd.	No vehicle data	Destination signage from OCRT, focus signs to beaches



Q	Pleasant St.	No vehicle data	Destination signage from OCRT, focus signs to beaches
R	Hardings Beach Rd.	>2,000 vehicles/day	Destination signage from OCRT, focus signs to beaches
S	Barn Hill Rd.	>4,000 vehicles/day	Destination signage from OCRT, focus signs to beaches
T	Route 137/Morton Rd.	Rt. 137 >8,000 vehicles/day Morton Rd. >1,000 vehicles/day	Bike shoulders/lanes, sharrows/signage
U	Sam Ryder Rd.	~3,000 vehicles/day	Bike shoulders/lanes, sharrows/signage
V	George Ryder Rd.	>2,000 vehicles/day	Bike shoulders/lanes, sharrows/signage
X	Queen Anne Rd.	Develop bike route along Queen Anne from Sam Ryder/Schoolhouse Pond into Harwich	Bike shoulders/lanes, sharrows/signage

Sources: Cape Cod Commission traffic counts, field observations by committee members and Cape Cod Commission staff

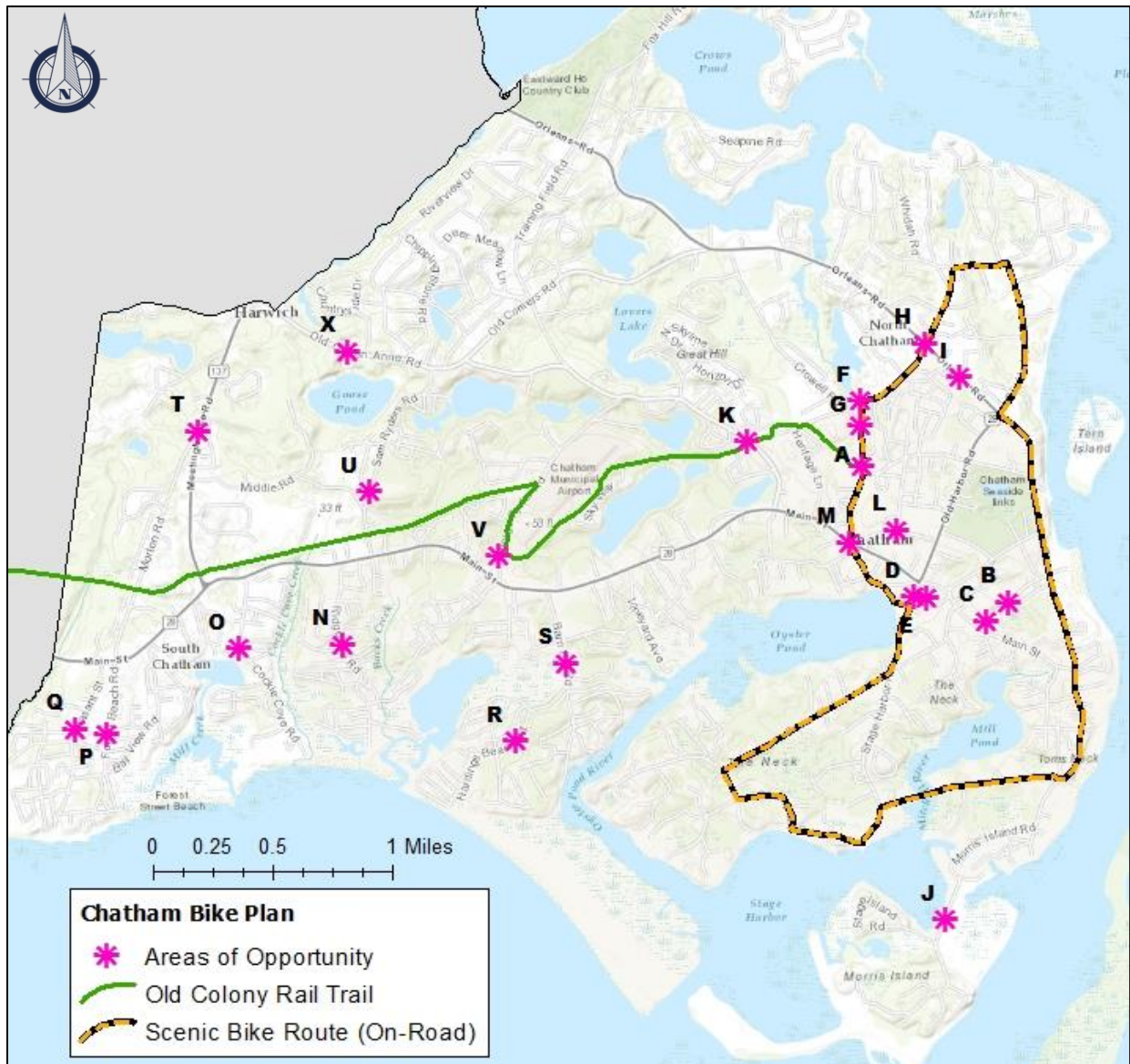


Figure 11 - Areas of Opportunity Map - Index of Noted Locations



Recommendations



Figure 12 - View of Old Colony Rail Trail at Crowell Road

After receiving feedback from the public, the Chatham Bikeways Committee met with Cape Cod Commission staff to analyze the comments received at the public listening session to create a recommendation list of projects to consider for implementation. The primary goal of every project is safety for all users.

Improving bicycling in a community such as Chatham, there must first be a strong focus on the “Three E’s”: engineering, education, and enforcement. These three components form a comprehensive whole, functioning independently while reinforcing one another to strengthen Chatham’s bicycling environment.

The first, **Engineering**, includes physical changes in infrastructure such as the creation of bike lanes and paths, improved signage and road markings (i.e. crosswalks, sharrows), and improved road surface conditions (i.e. sand removal, potholes, and obstructions). Good engineering supports education and enforcement.

Potential engineering improvements are discussed within the tables on the following pages. The tables present alternative methods for accommodating cyclists including dedicated on-street facilities (e.g., bike lanes, blinking lights at major crossings), off-street shared paths, designated bike routes, and other strategies.

The second “E,” **Education**, provides opportunities for residents and visitors to learn the rules of the road, particularly concerning the interaction of bicyclists, vehicle operators, and pedestrians, so that people using Chatham’s streets, bike



paths, and sidewalks have respectful, safe interactions. Education can take many forms – both formal and informal - and is directed at all segments of Chatham’s population, reaching everyone from children to seniors in a variety of locations, including a web presence.

Enforcement, the third “E,” is in many ways intended to be an extension of education. Ideally, a police officer who witnesses motorized vehicle and/or bicycling infractions can take the opportunity to inform the transgressor of their wrongdoing with positive future outcomes. For witnessed grievous and dangerous incidents, enforcement is critical to discourage future occurrences. The Bikeways Committee is committed to forming a partnership with the Chatham Police Department to foster training programs to inform all of the rules and rights of cyclists on roadways. The Committee also seeks the Police Department’s proactive cooperation in enforcing speed limits and educating the public about road and bike path etiquette, as well as enforcing bicycle helmet laws and bicycling infractions with appropriate warnings and tickets.

EDUCATION

The following is a list of recommendations for implementing a comprehensive bicycling education program in Chatham.

- Create and make available at all times and relevant locations (Old Colony Rail Trail, Town Hall, Chamber of Commerce, hotels and accommodations, libraries, schools, etc.) posters, internet content, and brochures regarding multi-use path regulations and rules of the road for bicyclists, pedestrians, and motor vehicle operators. For example, see “Biking in Chatham: Safety on Two Wheels” (<https://www.youtube.com/watch?v=aZsn7Mlorbo&feature=youtu.be>)
- Hold an annual town-wide bike/walk to work day and bike/walk to school day
- Host an annual bike celebration that features bicycle education, food, tune-ups, group rides and general merriment
- Host an annual bike forum that brings together various stakeholders to discuss best practices for educating people about bicycles
- Hold an educational and community-building event that reaches out to summer residents and visitors
 - Coordinate public education presentations and discussions about sharing the road and multi-use of the Old Colony Rail Trail at schools, senior centers, houses of worship, libraries, Chatham Community Center, village associations, etc.
- Participate in state and national Bike Month activities each May
 - Organize programs of education and enforcement in collaboration with Chatham Police Department.
 - Host the Tour de Chatham bike event annually
- Introduce public education specific to use and rules of the Old Colony Rail Trail, both on- and off-site
- Create bicycling educational videos for Chatham Channel 18



- Foster partnerships between private organizations as well as town entities including the Bikeways Committee, Traffic Advisory Committee, Chatham Schools, and Chatham Police Department.
- Provide financial support for bicycle education and encouragement programs within Chatham Public Schools
 - Apply for grants to support specific events and long-term educational programs among students and the adult population
 - Hold film screenings about bicycling or establish an annual bike film festival
 - Find ways to encourage and support Chatham's bike-to-school programs, Safe Routes to Schools initiatives, and community bike shops.

ENGINEERING: BICYCLE ACCOMMODATION TECHNIQUES

Bicycling can be accommodated to varying degrees by utilizing existing infrastructure and harnessing resources that improve bicycling in the community. These accommodations range from separate facilities (multi-use paths) to policy-level actions ("share the road" educational campaigns) that require little or no capital investment.

The MassHighway (MassDOT) Design Manual includes guidance on the types of accommodation needed based on factors such as traffic volume, available right-of-way, and travel speeds. This guidance is provided in the figures in appendix B.

An example of a specific treatment available for bicycle accommodation is installation of shared lane pavement marking known as a "Sharrow" (shared + arrow). The Sharrow indicates the safe positioning of bicyclists in the travel lane (away from doors opened by parked motorists). The Sharrow also alerts motorists of the likely presence of cyclists. Sharrow pavement markings are widely in use in Boston and suburbs. They have been installed in Provincetown and Falmouth and are under consideration by other Cape Cod communities (Figure 13).



Figure 13 - "Sharrow" Pavement Marking on Bridge Street in Chatham

In some locales in the US, a vehicle travel lane has been re-designated for bicycle use. In the figure below, a street in San Jose has been modified by pavement markings to provide a two-way bike path. Sometimes, two-way traffic on parallel main streets are converted to one-way each way to provide for safer and calmer motorized and non-motorized transportation.



Figure 14 - Conversion of Motor Vehicle Lane to Bicycle Path in San Jose

The most comfortable bicycle accommodation technique is the construction of a multi-use path such as the existing Old Colony Rail Trail. By having a dedicated space for pedestrians, bicyclists, and other trail users, interactions with motor vehicles are minimized.

No matter which roadside accommodation is selected, bicyclists may face a daunting situation when confronted with crossing a busy road. At crosswalk locations bicyclists have the option of dismounting and crossing as pedestrians. This is often the safest method, especially at signalized locations that do not have dedicated bicycle lanes.

A good example of a safe mid-block crossing would include a rectangular rapid flash beacon, these would be highly beneficial at Old Colony Rail Trail crossings. Cyclists, pedestrians, and other trail users can activate a flashing beacon via a push-button to alert motorists of their presence. At crossings of the Cape Cod Rail Trail in North Harwich and in Eastham, flashing beacons are activated by bicycles or pedestrians moving towards the crossings. In this situation, it is important that false activations are avoided since that would likely lead to decreased motorist compliance.



Figure 15- Crossing equipped with Rapid Flash Beacons

In addition to crossings and pathways, infrastructure should provide guidance to bicyclists of the best routes available to them via wayfinding signs. Our recommendations include installing signage following standards in Appendix D.

ENGINEERING RECOMMENDATIONS: TABLES AND MAPS

Following the overall development of recommendations with input from public meetings, the Bikeways Committee was tasked with devising a plan to implement them. This plan was then discussed and adjusted by the Committee. Table 4 presents an overview of projects and how they were categorized for implementation. Tables 5 and 6 offer more in-depth descriptions, estimated costs, and suggested implementation years. The Bikeways Committee has determined that safety improvements are the highest priority. The recommendations in Table 5 have been identified as projects that could be undertaken by the Town of Chatham, and the Committee has offered suggested implementation years based on the upcoming fiscal years. Table 6 are projects that can be implemented by the Town but are not safety related, nor do they have a proposed implementation year. Table 7 identifies the total suggested budgets for the upcoming fiscal years based on safety improvement projects only. Table 8 shows important recommendations to be implemented in an ongoing/annual basis.



Table 4- Overview of Recommended Projects

Project Type	Responsibility	No. of Projects
Bicycle Safety Improvements >\$20K each	Town	6
Bicycle Safety Improvements <\$5K each	Town	2
Bicycle - Non- Safety Improvements <\$5K each	Town	14
Bicycle Improvements General	MassDOT	3

Table 5 – Town Responsible Safety Improvement Projects

Location	Description	Cost x \$1,000	Suggested Implementation Year
Crowell Rd @Tip Cart Dr intersection at OCRT terminus	Solar-powered crossing lights, improve signage, delineate curb along Crowell to reduce crashes; one female bicyclist informed the Bikeways Committee in July 2017 that she was injured in this area and Bikeways Committee has heard reports from Chatham Boat Company staff of other mishaps and minor injuries at this location	30	FY19
Route 28 @ Queen Anne Rd @ Crowell Rd	Addition of bike lanes on the feeder roads to Route 28, with the addition of crosswalks and bike signage	750	FY22
George Ryder Rd	Extend existing bike lanes to and from the OCRT to Old Queen Anne Rd & Route 28 [.2 miles to Route 28]. Motion activated warning light at cross over point to OCRT	150	FY20
Hitching Post Rd @ Depot Rd	Connect OCRT terminus to Downtown Chatham. Add signage to guide bicyclists from Depot Rd to Downtown [Depot Rd to Old Harbor to Highland to Seaview]	5	FY20



Stage Harbor Rd	Designate the 350 feet from Pond St to the municipal lot as a bike route with wayfinding signage and/or Sharrows	2	FY21
Queen Anne Rd @ Stepping Stones Rd @ Wilfred Rd	Improved crossing with solar activated lights and wayfinding signage	21	FY21
OCRT crossing @ Route 137	Pull off area with Fix-It station, map kiosk and other amenities. Rapid flash beacons for a more updated crossing	30	FY21
Old Queen Anne Rd	Widen shoulders for bicycle lanes or a widened sidewalk [2.6 miles]	1,300	FY23

Table 6 – Town Responsible Non-Safety Improvement Projects

Location	Description	Cost x \$1,000
Chatham Bars Ave	Establish a bike connection from Scenic Bike Route to Downtown Chatham via Chatham Bars Ave. Wayfinding signage and/or Sharrows would be appropriate	2
Sam Ryder Rd	Share the road accommodations along Sam Ryder Rd through the installation of wayfinding signage and Sharrows	3
Kate Gould Park	Signage indicating Kate Gould Park as a destination for bicyclists looking to access Downtown Chatham. Signage and updated bike racks are necessary	2
Morris Island Rd	Share the road accommodations including Sharrows and wayfinding signage	2
Stage Harbor Rd Municipal Lot	Signage indicating the lot as a destination for bicyclists looking to access Downtown Chatham. Signage and updated bike racks are necessary	1



Harding's Beach Rd	Improve pavement markings and wayfinding signage to the beach	2
Barn Hill Rd	Implement wayfinding signage at the intersection of Route 28 as well as along the existing multi-use path	2
Ridgevale Rd	Share the road accommodations including Sharrows and wayfinding signage	2
Cockle Cove Rd	Share the road accommodations including Sharrows and wayfinding signage	2
Forest Beach Rd	Share the road accommodations including Sharrows and wayfinding signage	2
Pleasant St	Share the road accommodations including Sharrows and wayfinding signage	2
Crowell Rd @ Lake St	Additional wayfinding signage indicating direction of scenic bike route	.3
Stony Hill Rd @ Lake St	Additional wayfinding signage indicating direction of scenic bike route	.3
Wilfred Rd	Increase signage along road as well as adding Sharrows to pavement	4

Table 7 – MassDOT Responsible General Bicycling Projects

Location	Description	Cost x \$1,000	Suggested Implementation Year
Route 28 between Stony Hill Rd and Old Harbor Rd	Widening of shoulders and/or add sidewalks; intersection upgrades including sidewalks and wayfinding signage	250	TBD
Route 28 @ Stony Hill Rd	Updated crossing at intersection and wayfinding signage indicating Scenic Bike Route	2	TBD
Route 137/Morton Rd	Add bike lanes or wide sidewalks along Route 137 until Morton Rd too connect to CCRT and Route 28	800	TBD



Table 8 – Total Suggested Budgets for Upcoming Fiscal Years

Item	FY19	FY20	FY21	FY22	FY23
Safety Improvements	\$30K	\$155K	\$53K	\$750K	\$1,300K
Other Projects - Non-Safety	\$15K	\$15K	\$15K	\$15K	\$15K
Total	\$45K	\$170K	\$68K	\$765K	\$1,315K

Each recommendation above is shown by rank on a town-wide map (Figure 16)

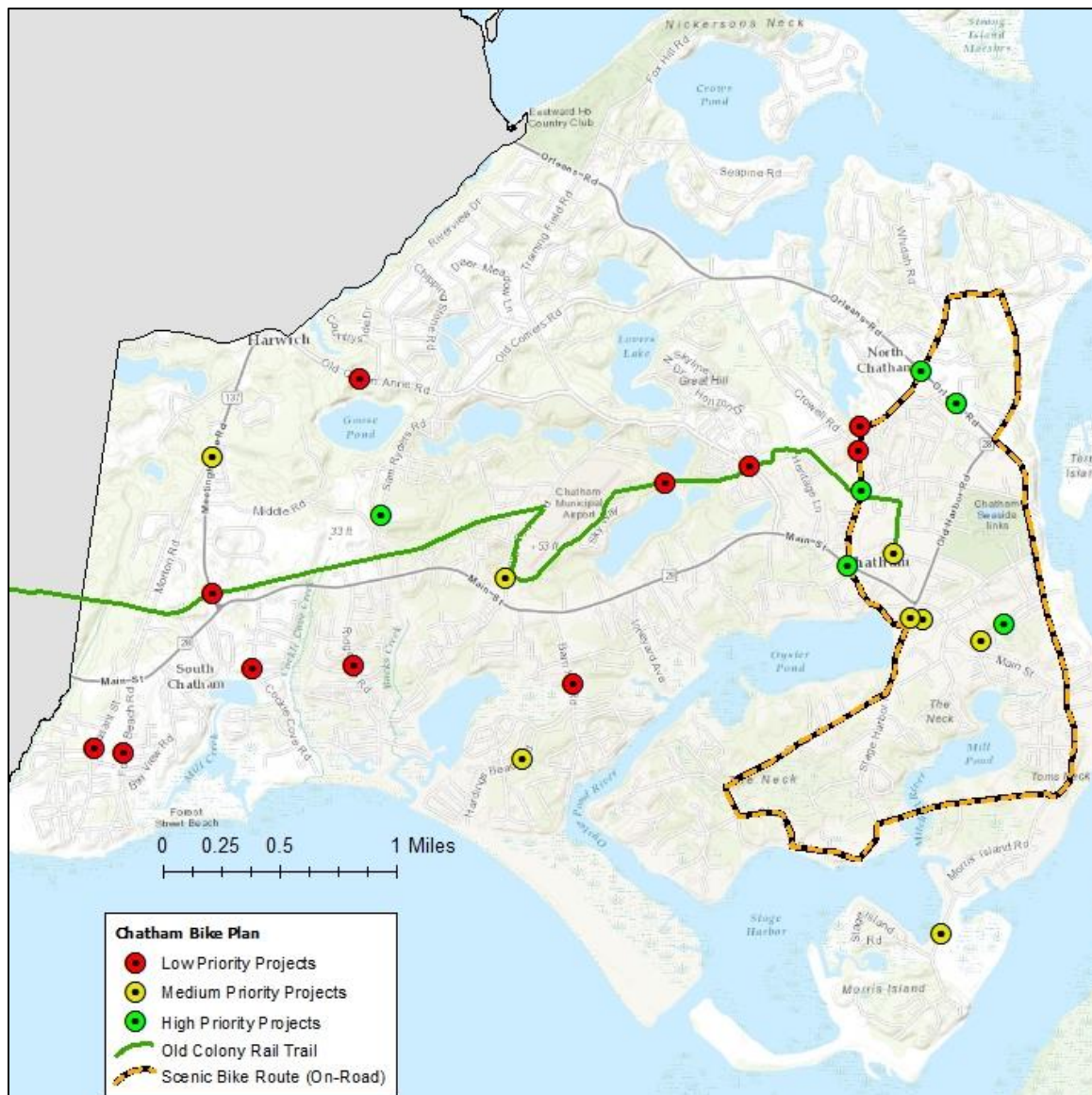


Figure 16- Recommendations Map – Priority Levels



The following table presents the recommendations that are to be implemented on an ongoing or annual basis.

Table 9 - Ongoing/Annual Recommendations

Location	Description
Old Colony Rail Trail - maintenance	Add maintenance line item to annual DPW budget
Town-wide - Road resurfacing projects	Narrow travel lanes to calm traffic, and increase shoulder to accommodate non-motorized transport
Town-wide – Bicycle safety signage and sharrows	Include “Bicycles may use full lane” signage and pavement markings on roads (esp. at sharp curves and where bike shoulders/lanes do not exist)
Town-wide – Paths	Consider creation of multi-use paths
Town-wide - Education	Bicycling education program (see text of report)
Chatham Police Department	Work with Chatham P.D. for improved enforcement of speed limits, road sharing rules, crosswalk usage, oversight of the Old Colony Rail Trail
Town-wide – sand removal	Remove sand from shoulders
Town-wide - Crosswalks	During roadway maintenance, improve crosswalk markings to “piano key” style
Town-wide – Bike Racks	Continue to install bike racks throughout town
Town-wide – Wayfinding Signage	Install wayfinding signs throughout town to guide cyclists to points of interest and best routes
Town-wide – Fix-it stations	Install Fix-it stations in various locations throughout town



Figure 17 - Bicyclist using Fix-it station



Figure 18 – Bicyclists riding along the Old Colony Rail Trail

IMPLEMENTATION

Strengthening Chatham's bicycling environment and realizing the comprehensive vision of this Plan depends upon commitments by the Town and multiple supporting partners, both governmental and private. Recommended actions for implementing engineering, education, and enforcement priorities include, but are not limited to:

Establish maintenance & improvement budgets for non-motorized infrastructure

Stable funding is essential for the completion of recurring and non-recurring projects of high priority. This Plan identifies a number of items to improve infrastructure for non-motorized transportation. Funding these items will best be done if maintenance is funded separately from improvements. This could be realized if the budget for the Department of Public Works (DPW) specified that a percentage of budgeted funds be allocated to maintenance of non-motorized infrastructure, including the Old Colony Rail Trail, sidewalks, roadway shoulder striping, and pavement repairs.

Alternatively, DPW could be directed by Town government to allocate a percentage of its Highways budget to non-motorized facility maintenance.

To address priority bicycling infrastructure improvements, the DPW and Bikeways Committee should be charged with identifying and pursuing funding sources at local, regional, state and federal levels, with assistance from other Town and regional transportation officials as may be needed. Identification of projects to be initiated should require agreement between the Bikeways Committee, in its chartered role as advisor to the Town, and DPW.



Create a Town staff position to lead bike plan implementation

The Town should designate existing staff member(s) or consider hiring a new bicycle and pedestrian coordinator who is responsible for ensuring that Bike Plan implementation occurs in a coordinated and timely manner. Staff member(s) could be part of the DPW, Planning Department, other relevant town departments, or, ideally, coordinate across multiple departments. Chief responsibilities of the staff member(s) should include identifying and applying for project implementation funds, communicating and coordinating planning funding and implementation efforts across departments and committees within and outside the Town as appropriate, leading community outreach including regular public meetings, and compiling data for progress reports, as detailed further in this section.

Capitalize on any opportunities to implement Bike Plan recommendations

Implementing Departments and entities should consider all the priorities listed in Table 1 to be deserving of significant attention. For example, the Crowell Road Intersection Improvement Project, and the Local Comprehensive Plan Transportation Element should include and support the Bike Plan's recommendations. The project listings should be interpreted as a guide, not a strict order for implementation. As funding and other resources align to make it feasible to implement particular projects, funds should be pursued in a strategic and timely fashion, including consideration of bundling or combining projects where possible to speed improvements.

Consult with Town Bikeways Committee to guide bike plan implementation

As the Town's chief community representatives on biking matters, the Bikeways Committee is in a strong position to provide context and guidance on implementing projects recommended by this Plan and otherwise. If, for example, there is debate over which project to pursue with a given amount of available funding, the Town implementing entity should be required to consult the Bikeways Committee for advice and endorsement.

Increase collaboration across Town departments and committees

Completion of Bike Plan recommendations will depend strongly on multiple Town departments and committees being aware of their existence and importance. For example, DPW should take into account bicycling infrastructure when implementing road improvements, as should other Town Departments that could impact bicyclists through planning or construction endeavors.

Collect regular data on town bicycling ridership

The Town should conduct annual or, ideally, semi-annual (peak and off-peak seasonal) counts of bicyclists at locations throughout the community. Tracking data on year-over-year and seasonal differences in bicycle ridership will help the Town to better understand engineering, education, and enforcement needs over time, as well



as the success of the Town in attracting bicycling-related tourism. These counts should be standardized and conducted by Town staff, Bikeways Committee members, or trained volunteers.

Publish annual update on Bike Plan progress

In order to ensure that the Bike Plan remains a living document that reflects the community's needs and uses resources wisely, the Town, with assistance from the Bikeways Committee and DPW, should complete and make publicly available an annual summary of in-progress, completed, and planned non-motorized projects. The update can be a component of the Town Annual Report. It should also include the most recent data on bicycle ridership, roadway incidents, and other relevant metrics as appropriate.

Build awareness and relationships at neighboring town, county and state levels

In addition to collaboration within the Town, successful Bike Plan implementation needs support from other levels of government with ownership over local transportation infrastructure. The Town should seek and maintain intergovernmental relationships to create mutual awareness and support for improvements with implications outside its boundaries.

Collaborate with local organizations to advance the plan's implementation

Local bike advocacy groups can offer knowledge, enthusiasm, and resources that can prove critical to implementing the recommendations of this plan. Regular communication about Bike Plan progress with these and other relevant groups, including local employers looking to encourage commuting by bicycle, is essential to retaining momentum on implementation.

Hold annual public meeting on Bike Plan progress

In order to keep the community engaged and broaden awareness about bicycling issues, the Bikeways Committee should hold a meeting on an annual basis, or more often as deemed necessary, to update the community on pertinent bicycling issues and progress toward completing priority projects.

Organize group bicycle rides for local employees

It is critical that staff involved in implementing the Bike Plan have a common understanding of existing bike conditions in Chatham. The Town and/or the Bikeways Committee should organize at least two bike rides or team field visits per year for staff, directly or indirectly involved in implementing the Bike Plan, to visit sites where plans or action is ongoing or finished. These on-the-ground site visits will lend important perspective to inform engineering, education, and enforcement improvements.



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Appendix A: Bikeway Maps

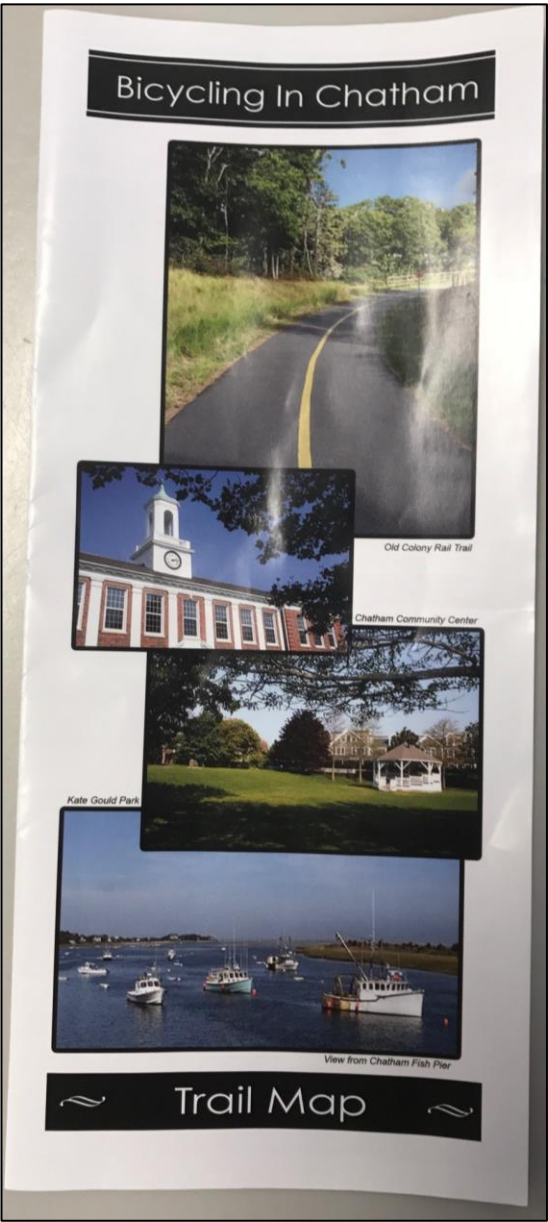
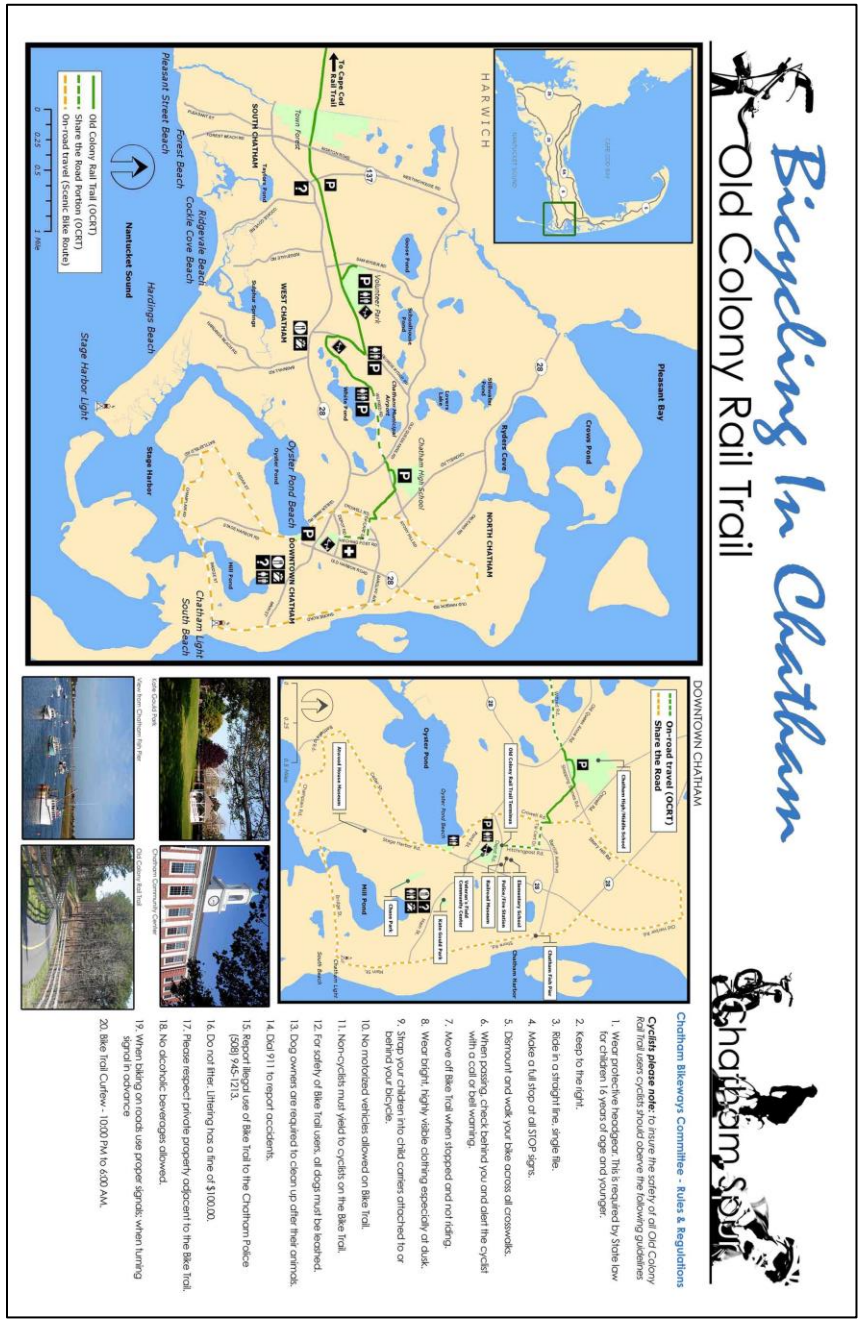


Chatham Bikeways Map produced by the Town of Chatham



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The previous Chatham Bikeways map transformed to a trail map which is located at kiosks throughout Chatham as a guide for residents and visitors. Produced as a brochure, the map provides information on the most comfortable biking options, destinations, and services.



Bicycling in Chatham Trail Map brochure

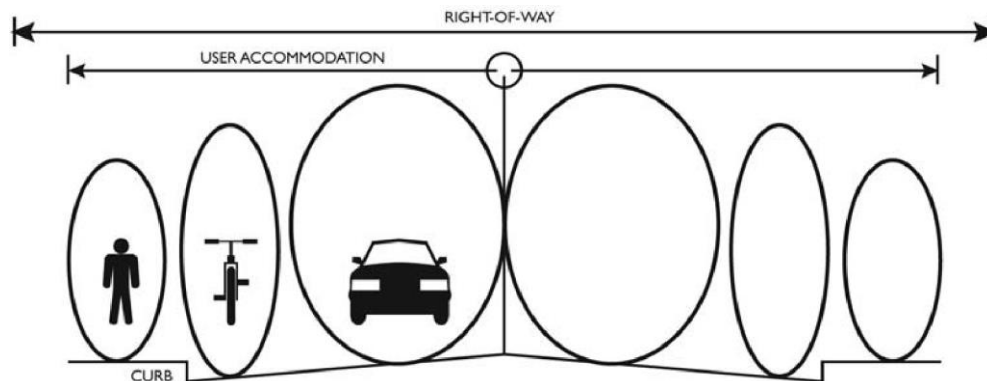


Appendix B: MassDOT Design Guide Bicycle/Pedestrian Accommodation

The following are excerpted from the Massachusetts Department of Transportation's Design Guide. The Chatham Bikeways Committee has included applications of each case identified with **parentheses**.

Case 1 - Separate Accommodation for All Users **(Bike Lane)**

- 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.

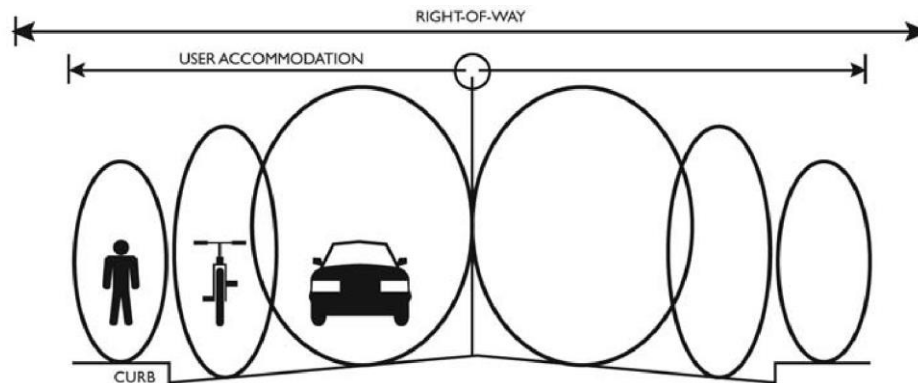


MassDOT Design Guide: Case 1 - Separate Accommodation for All Users



Case 2 - Partial Sharing for Bicycles and Motor Vehicles (Wide Shoulder)

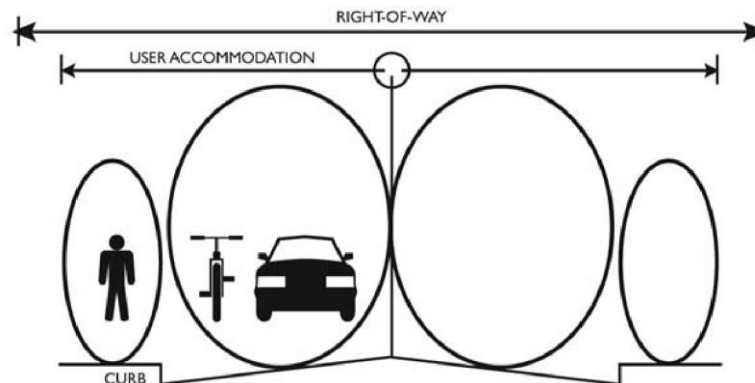
- Used in areas where the width necessary to provide Case 1 accommodation is not available.
- Under Case 2, pedestrians are provided with a sidewalk or separate path while space for bicyclists and drivers overlap somewhat.
- Appropriate in areas with low motor vehicle speeds and low to moderate motor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



MassDOT Design Guide: Case 2 - Partial Sharing for Bicycles and Motor Vehicles

Case 3 - Shared Bicycle/Motor Vehicle Accommodation (Sharrow)

- 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.

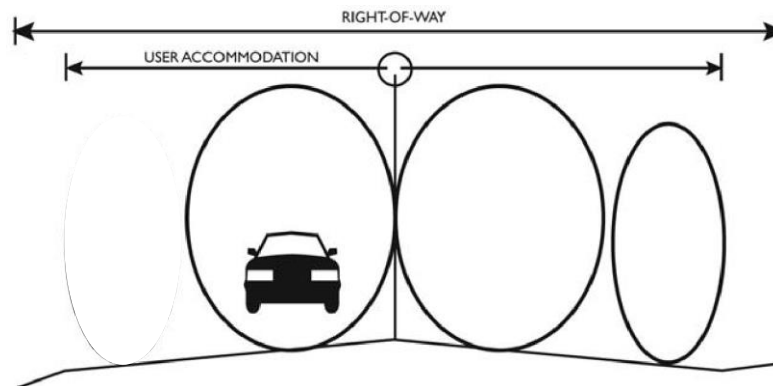


MassDOT Design Guide: Case 3 - Shared Bicycle/Motor Vehicle Accommodation



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.

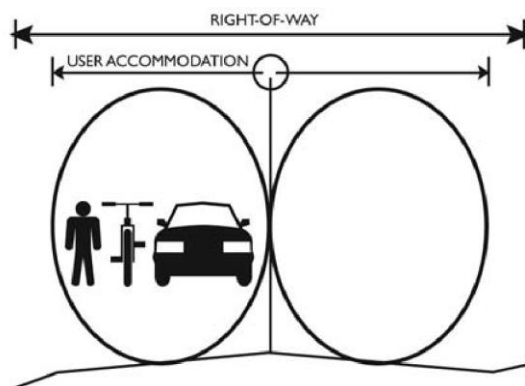


MassDOT Design Guide: Case 4 - Shared Bicycle/Pedestrian Accommodation

The Bikeways Committee has identified wider sidewalks and preferably multi-use paths as strategies for Case 4.

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.



MassDOT Design Guide: Case 5 - Shared Accommodation for All Users



Appendix C: Unit Costs of Improvements

The following table of unit costs of bicycle and pedestrian accommodation techniques was included in the “Bicycle Feasibility Study: Integrated Bicycle Plan for Cape Cod” published by the National Park Service/Cape Cod National Seashore in partnership with the Cape Cod Commission in 2011.

Bicycle & Pedestrian Accommodations Unit Costs

Accommodation	Requirements	Unit	Unit Cost
On-road bikeway	Signing & striping	LF	\$ 2.00
On-road bikeway	Widen existing roadway to provide shoulder/bike lane	LF	\$ 95.00
Off-road bikeway	Construct shared use path adjacent to existing roadway, including utility pole relocation	LF	\$ 145.00
Off-road bikeway	Construct rail to trail path using abandoned railroad bed, minimal grading required	LF	\$ 125.00
Off-road bikeway	Construct shared use path on new alignment	LF	\$ 165.00
Off-road bikeway	Construct shared using existing corridor, minor grading and clearing required	LF	\$ 150.00
Roadway Crossing, residential	Pavement markings, and curb cuts/ADA curb ramps	EA	\$ 1,500.00
Roadway Crossing, signalized	Mast arms, signal heads, pedestrian signals, pavement markings, and curb cuts/ADA curb ramps	EA	\$ 70,000.00
5' Sidewalk, bituminous	Sidewalks located on both sides of street	LF	\$ 120.00
5' Sidewalk, concrete	Sidewalks located on both sides of street	LF	\$ 140.00
Bicycle/pedestrian bridge	Total lump sum construction	LS	\$1,200,000.00
Wayfinding Signage	Complete signage for wayfinding including directional and distance signs, route signs, destinations, etc.	LM	\$ 18,400.00
Bicycle rack (parking)	Installation on existing slab, drill & grout bolts	EA	\$ 1,500.00
Parking lot, trailhead		EA	\$ 50,000.00



Appendix D: Wayfinding

As part of ongoing planning for the revitalization of Chatham and as an effort to connect parts of Chatham (for example, points of interest with the Old Colony Rail Trail), the Cape Cod Commission is providing an example of a wayfinding plan (including some graphics originally produced for the town of Harwich and Falmouth).

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 moving forward.

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 resident's 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 use of excessive signage. This "peeling the onion" approach to planning has been effective in creating plans throughout the world.

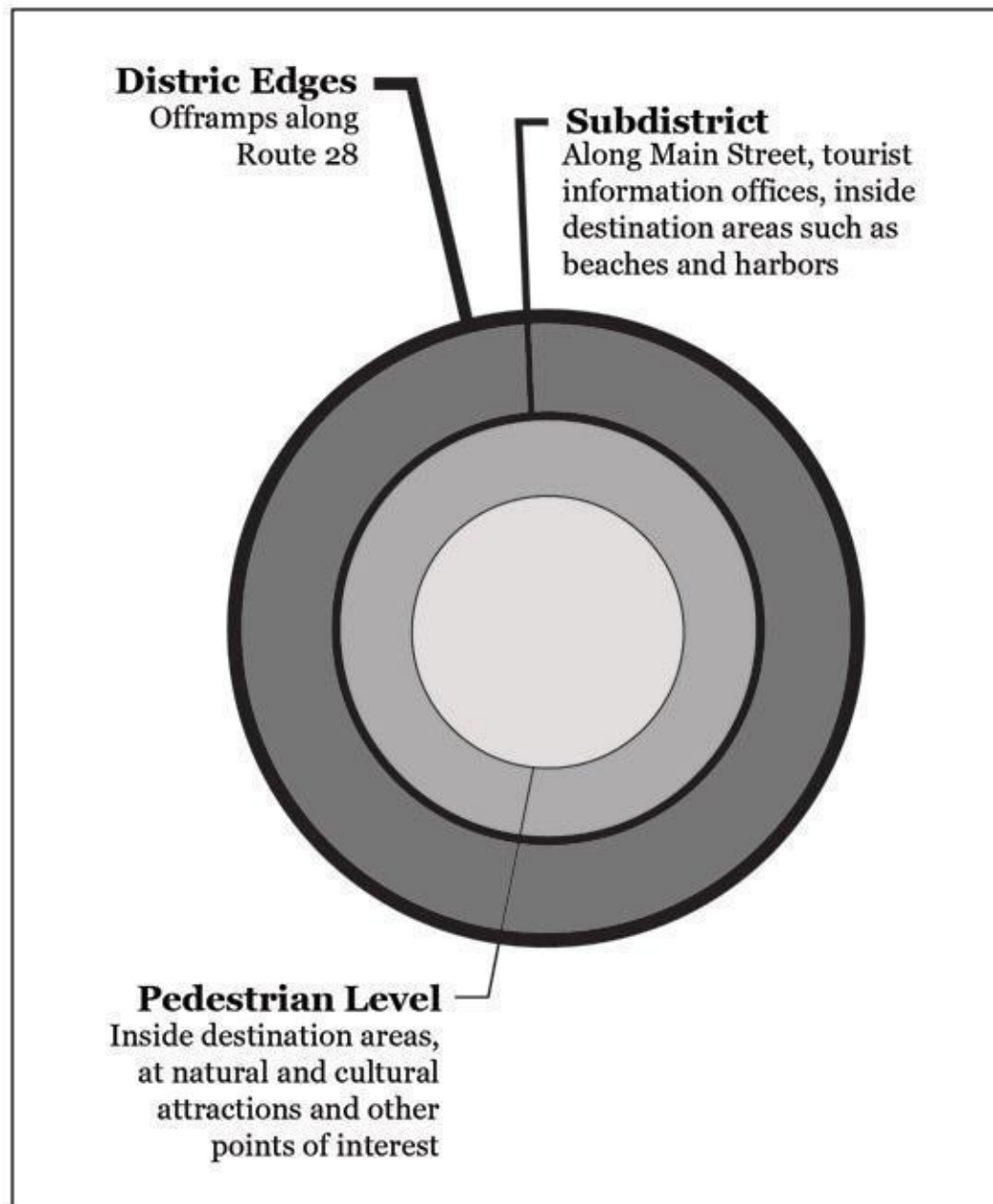
Wayfinding in Chatham

Currently, Chatham 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 an interconnected system to help visitors successfully navigate in unfamiliar surroundings. Signage should be designed to indicate a sense of place. At the same time, it is of great importance to carefully avoid wayfinding signage directing to specific businesses by name, as this opens issues of equity and fairness.

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 Chatham would include features shown on the following graphic.



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Wayfinding Hierarchy



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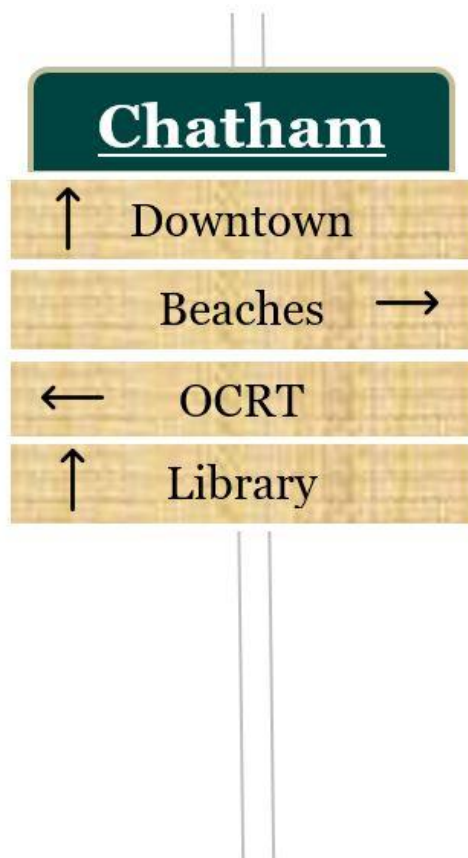
District Edges

The following examples could be located at natural entrances to downtown Chatham.

Direct to: Smaller sub-districts, major landmarks (e.g., Harbors, Beaches, Parks, Main Street, etc.).

District Edge Signage could include:

Directional Signage: Routes pedestrian or vehicular traffic. Should have no more than four important destinations listed (e.g., “Downtown,” “Beaches,” “OCRT”, etc.).



Example of Directional Signage



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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 wayfinding kiosk with 2 information panels



Inside Sub-district

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



View of existing wayfinding signage

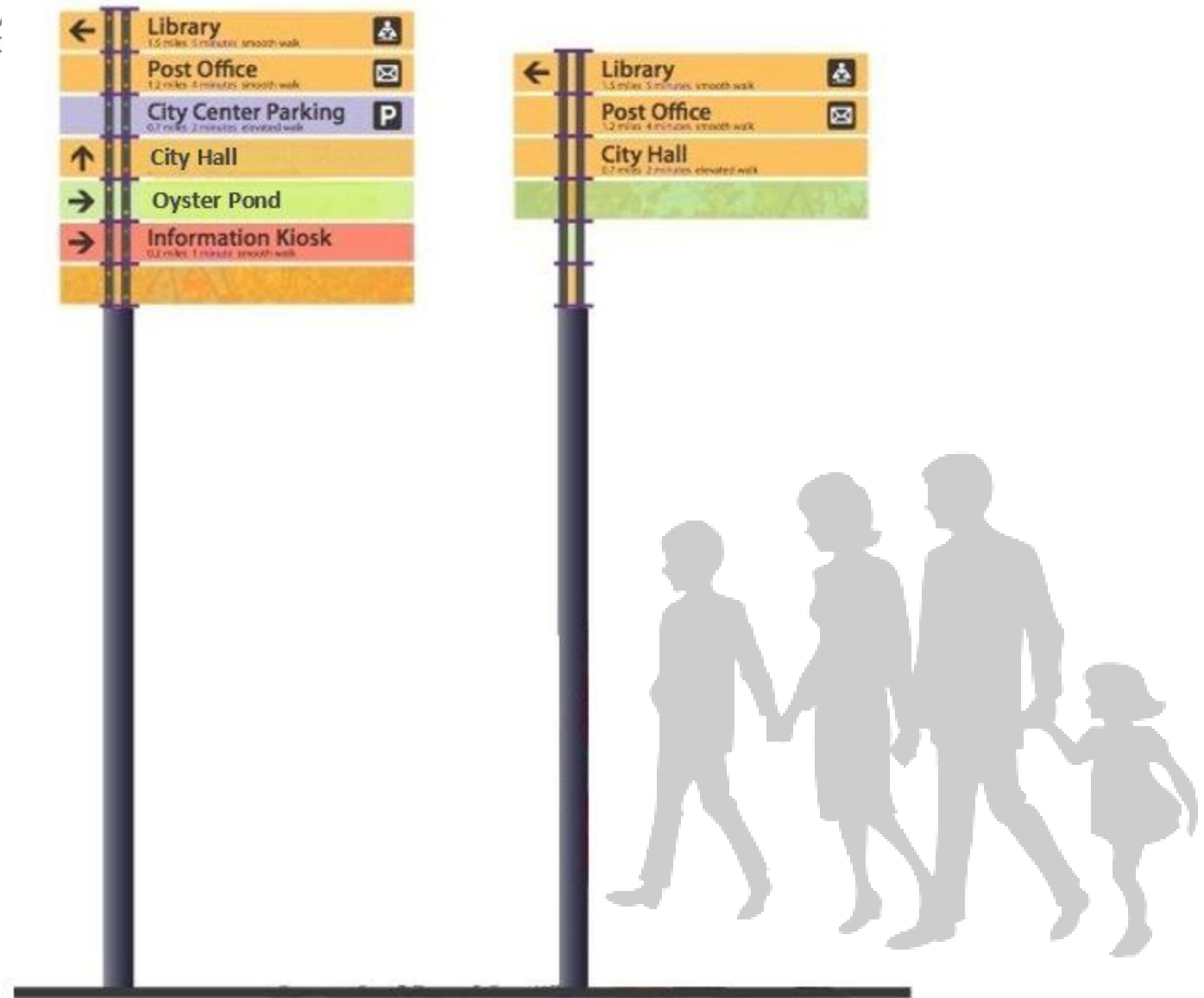
Direct to: Larger destinations and parking.

Sub-district 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.



C,
CC



Example of Informational and Parking signs



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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 versus the Standardized Bicycle Signage

Pedestrian Level

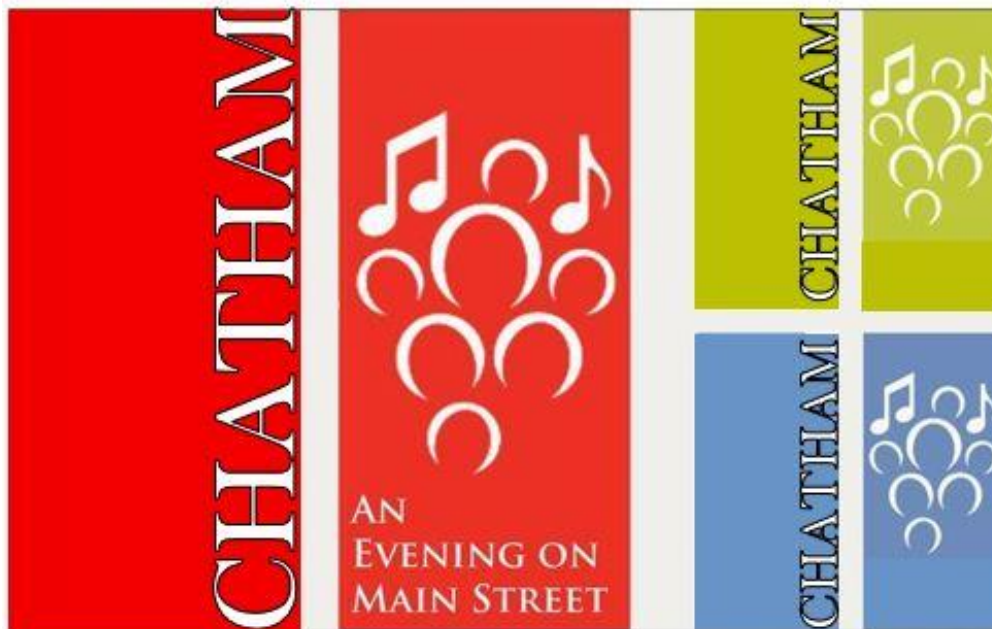
The following examples could be located inside destination areas, at natural and cultural attractions and at other points of interest. Any or all of these examples can be combined into a wayfinding kiosk at appropriate pedestrian connection points.

Direct to: Points of Interest.

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



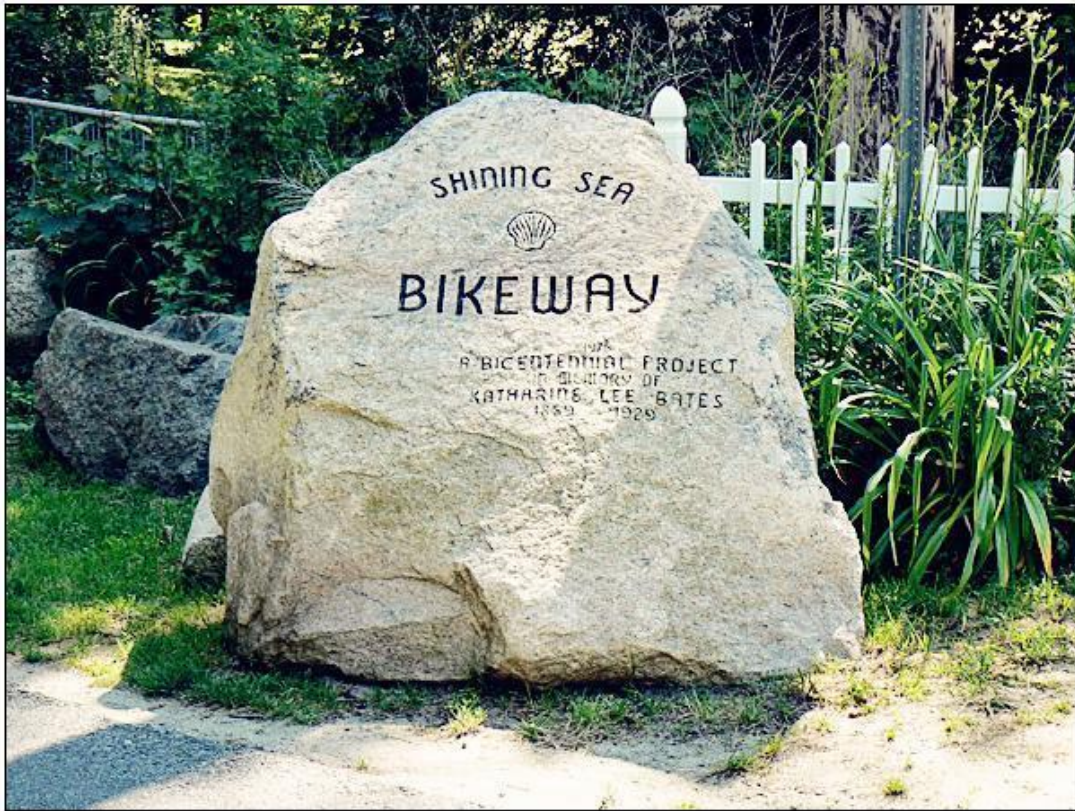
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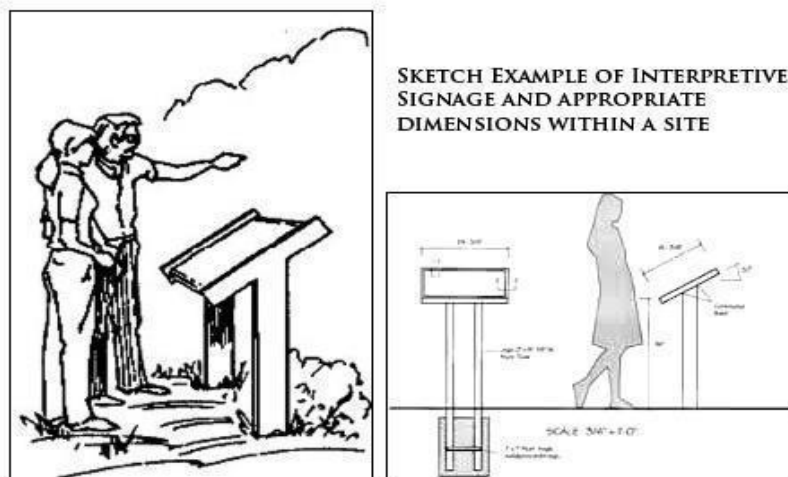
Examples of identity banners



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.



Example of Interpretive Signage at the Shining Sea Bikeway Bike Trail in Falmouth

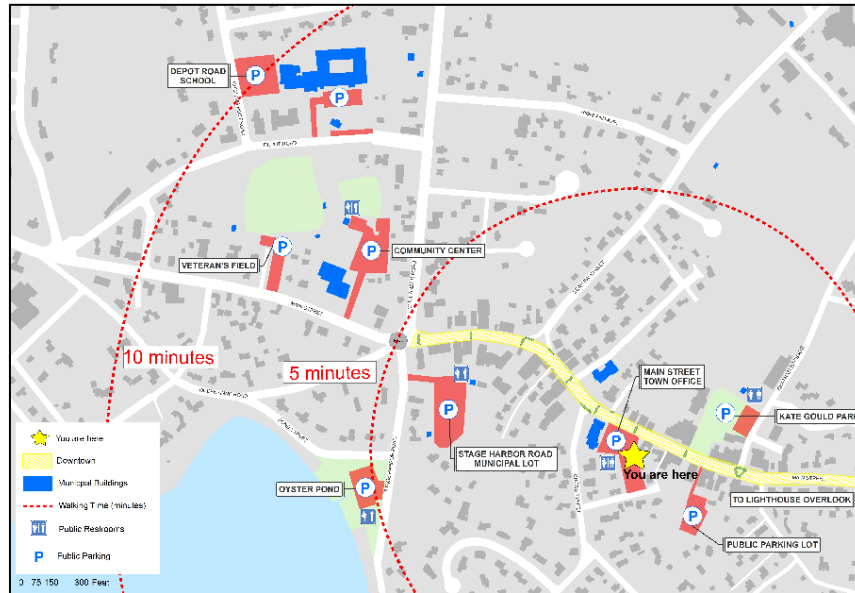


Sketches of Interpretive Signage



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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 Chatham

INDUSTRY SIGNAGE STANDARDS

For wayfinding to function as it is 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 or 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.

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 sub-districts 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 and choosing a signage material that does not easily scratch and can be easily cleaned (HPL or porcelain).



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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*.



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