Boothbay-Boothbay Harbor

Bicycle-Pedestrian Plan

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Prepared by

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and

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Boothbay-Boothbay Harbor Bicycle-Pedestrian Plan

Table of Contents

Figures

Tables

Appendix
(under separate cover)

Section 1

Introduction

The towns of Boothbay and Boothbay Harbor have long been the destination of day-visitors, tourists and summer residents as well as young families and retirees. Boothbay Harbor village offers unique opportunities for residents and visitors to walk, shop and enjoy a picturesque waterfront while Boothbay provides a wide variety of coastal and inland residential neighborhoods and tourist destinations including the Boothbay Botanical Gardens, Boothbay Railroad Museum and Ocean Point. All of the communities' schools are accessible by sidewalk from Boothbay Harbor and a soon-to-be-built sidewalk extension to Boothbay Center will provide additional access for students from that community.

While Boothbay Harbor has over five miles of sidewalks, Boothbay's sidewalks are limited to about 3,000 linear feet in several locations on Ocean Point Road (Route 96). With the exception of wide paved shoulders on Route 27 between Route 96 and the school complex and a few areas on Route 96, bicycle-suitable facilities are lacking in both communities, requiring bicyclists and motorists to share the roads. Gravel shoulders, narrow widths, horizontal and vertical curves and, in some locations, poor travel surfaces and significant traffic volume make bicycling in the communities dangerous.

The Towns of Boothbay and Boothbay Harbor, Maine Department of Transportation and the Lincoln County Regional Planning Commission (LCRPC) began a bicycle and pedestrian study in 2012 with the intention of determining the level of interest in bicycling, walking and jogging in the communities. The study included the following work tasks:

- Evaluating pedestrian and bicycle access to the transportation system including the need, if any, for new or improved sidewalks, crosswalks or road shoulders, bike lanes or other facilities to enhance safety for pedestrians and bicyclists in Boothbay and Boothbay Harbor including any off road routes that may be needed for connectivity.

- Reviewing existing bike-ped-related ordinance and site plan provisions and, if necessary, recommending amendments to address any deficiencies

- Evaluating the current sidewalk/bicycle budget and the funding mechanism for sidewalk/bicycle facility maintenance and capital improvements

- Developing a public informational process to make the public more aware of the existing and potential future role of pedestrian and bicycle facilities in Boothbay and Boothbay Harbor and to solicit public input into the planning process

- Identifying permits that may be required for implementation and preparing maps

Paper surveys were made available at a number of public facilities in both communities and on-line surveys were advertised and linked to the Boothbay Harbor and LCRPC websites. Separate paper and on-line surveys designed specifically for students were created.

As part of the study, students and non-students were asked why and where they walked, jogged or biked in the communities, the routes they took, the condition of existing facilities, recommendations, if any, for new or improved facilities, safety concerns and related information. A total of 106 student surveys and 68 non-student surveys were completed. The results of these surveys, as well as research conducted on existing facilities and meetings with the Boothbay-Boothbay Harbor Bike-Pedestrian Committee and survey respondents who provided contact information, served as the basis for the findings and the recommendations in this plan.

Section 2

The Community

Between 1990 and 2010, Boothbay's population grew by 17.8% to 3,120 while Boothbay Harbor's population declined by 7.8% or 182 to 2,165. During this same time period, the median age in Boothbay increased from 38.1 to 51.7 and in Boothbay Harbor from 41.7 to 55.8. Clearly, younger families are being replaced by older individuals, many of whom are retiring to the Boothbay peninsula. This could result in an increase in demand for additional sidewalks, especially in Boothbay.

Housing units increased by 44.3% to 2,474 in Boothbay from 1990 to 2010 and by 15.4% to 2,175 in Boothbay Harbor. Seasonal residences represent 36% and 41% of the housing stock in the two communities, respectively. As evidenced from the History of Growth Maps presented in Figure 1, development historically was located within or in proximity to Boothbay Harbor village, Bayville, Ocean Point and East Boothbay and some areas along the coast. Since the 1970's, however, development in coastal areas has significantly densified while also spreading throughout the inland portions of the communities in a typical sprawl pattern, which is especially evident in Boothbay.

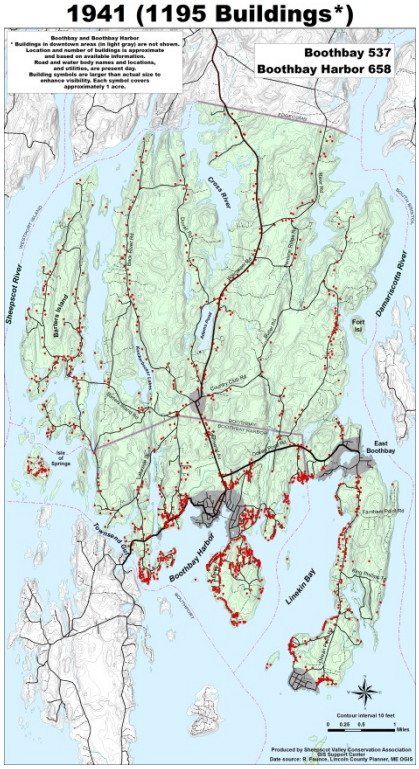
Boothbay Harbor's most notable natural resource is, of course, the harbor and the commercial and residential neighborhoods that hug its shoreline while Boothbay has extensive and accessible shoreline on the Sheepscot, Back, Cross and Damariscotta Rivers and Linekin Bay (see Figure 2).

On any summer day traffic on area roadways including Route 27, Corey Lane, Route 96, Western Avenue, Townsend Avenue and Oak Street can be formidable to bicyclists and to pedestrians who do not have access to a sidewalk. Table 1 presents average annual daily traffic data (AADT) for selected locations in the two communities. Surprisingly, heavy traffic in Boothbay Harbor village does not affect residents and visitors as much as one might expect because its extensive sidewalk and crosswalk system permits individuals to walk safely to almost any destination in the village, using the pedestrian bridge, to the east side of the harbor.

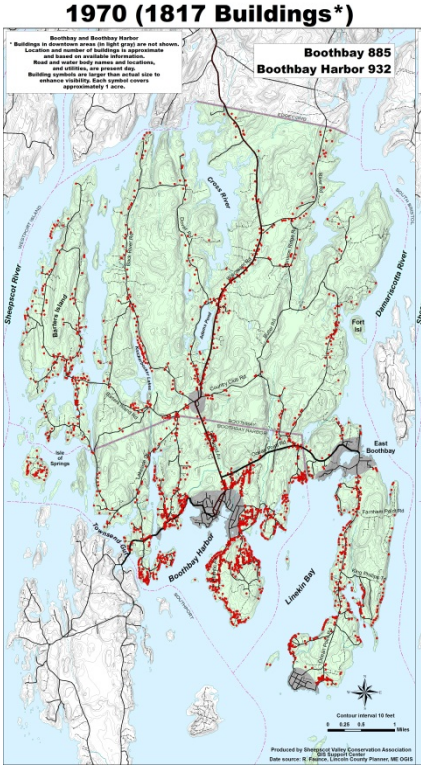
Figure 1 Boothbay and Boothbay Harbor History of Growth Maps

1891 (495 Buildings*)

1941 (1195 Buildings*)



1970 (1817 Buildings*)



2007 (3178 Buildings*)

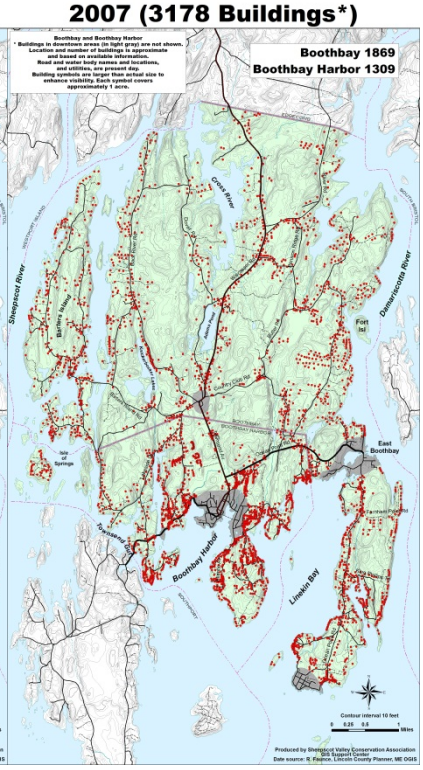


Figure 2 Boothbay and Boothbay Harbor

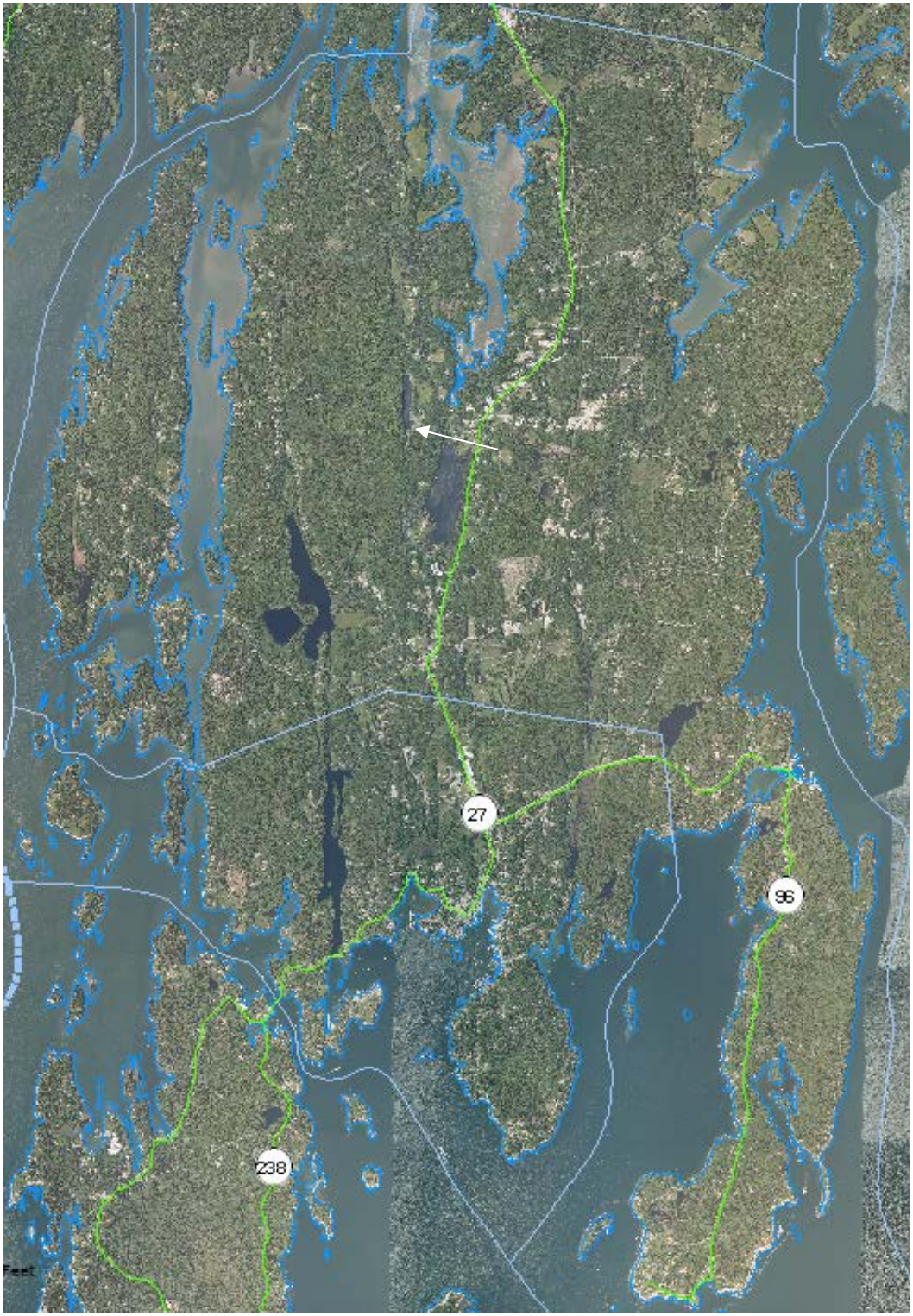


Table 1 Boothbay and Boothbay Harbor Traffic Counts

Roadway	Location	2010 AADT[1,2]	Town
Route 27	South of River Road	8,000	Boothbay
Route 27	North of Common Drive	10,060	Boothbay
Corey Lane	South of Back Narrows	4,860	Boothbay
River Road	East of Route 27	1,460	Boothbay
Barters Island Road	East of Sawyer Road	1,380	Boothbay
Back River Road	North of Corey Lane	1,000	Boothbay
Route 96	North of Royall Road	1,290	Boothbay
Route 27	North of Route 96	10,400	Boothbay Harbor
Route 27	Near Southport town line	3,320	Boothbay Harbor
McKown Point Rd	South of Route 27	1,070	Boothbay Harbor
Townsend Avenue (Route 27)	South of Eastern Avenue	5,750	Boothbay Harbor
West Street (Route 27)	East of Middle Street	4,000	Boothbay Harbor
Lakeside Drive	North of Route 27	1,810	Boothbay Harbor
Route 96	North of Eastern Avenue	4,240	Boothbay Harbor
Route 96	Near Boothbay town line	3,530	Boothbay Harbor
Union Street	North of Atlantic Avenue	3,860	Boothbay Harbor
Atlantic Avenue	North of Road's End	1,380[1]	Boothbay Harbor
Oak Street	South of McClintock Street	3,380	Boothbay Harbor
West Street	North of Route 27	1,840	Boothbay Harbor

[1] Average Annual Daily Traffic [2] Source MDOT [3] 2007 Data

Figures 3, 4 and 5 and Table 2 illustrate Boothbay Harbor's and Boothbay's sidewalk and crosswalk system. Of the entire 6.0 mile sidewalk system, 5.4 miles are located in Boothbay Harbor and 0.6 miles are within Boothbay. Table 2 is based on the results of a sidewalk and crosswalk survey completed by Lincoln County Planner Bob Faunce in 2012. As noted in Table 2, sidewalk surfaces vary from asphalt to poured concrete and concrete pavers. Overall, 1.06 miles of sidewalks were rated poor-fair or poor–good.

There are some gaps in the sidewalk system, principally in Boothbay. East Boothbay has a sidewalk extending from Meadow Cove to the vicinity of the entrance to Bigelow Laboratory but no areas to the south or west have sidewalks. In addition, the Boothbay Commons area has pedestrian traffic due to its proximity to the town office, post office, a convenience store, seasonal restaurant and the Commons itself but until the proposed sidewalk from the school complex to the Commons is completed, this area will not have a sidewalk. Also, there is seasonal pedestrian traffic between the Boothbay Railway Museum, Shore-Hills campground, a convenience store that is presently closed and other tourist services but individuals must walk on the shoulder of Route 27.

Figure 3 Sidewalks and Crosswalks in Boothbay Harbor and Boothbay

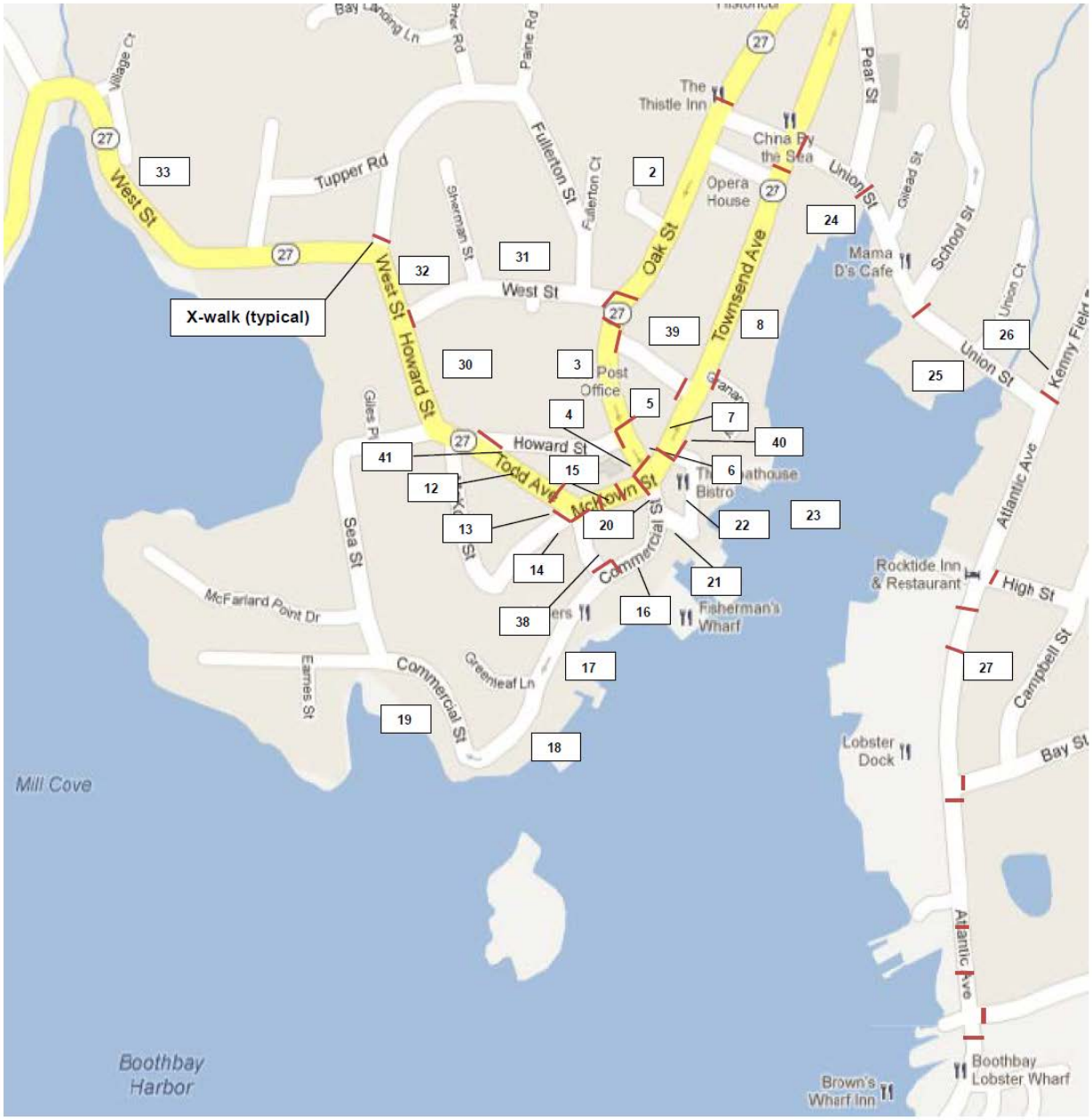


Figure 4 Sidewalks and Crosswalks in Boothbay Harbor and Boothbay

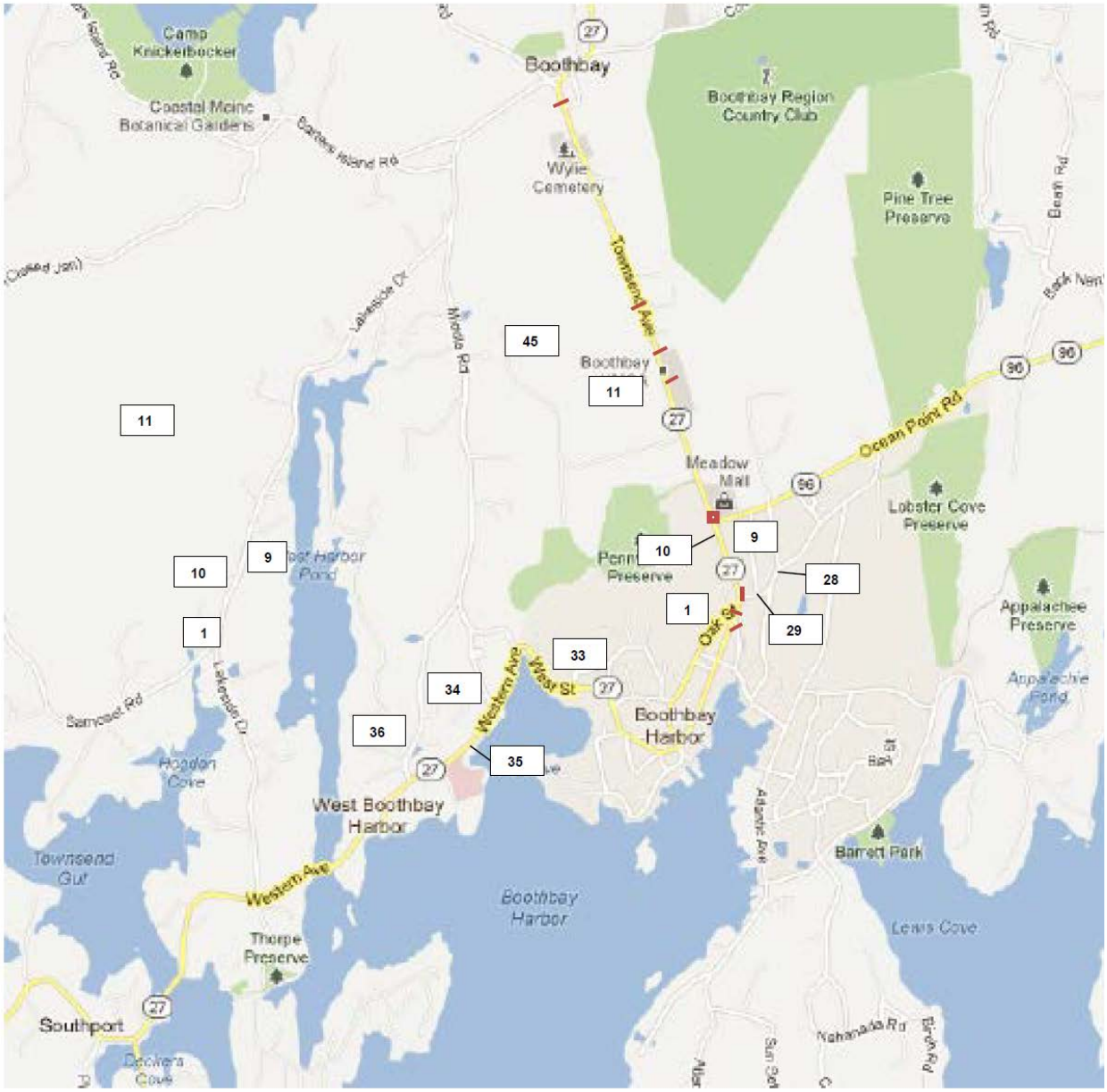


Figure 5 Sidewalks and Crosswalks in Boothbay Harbor and Boothbay

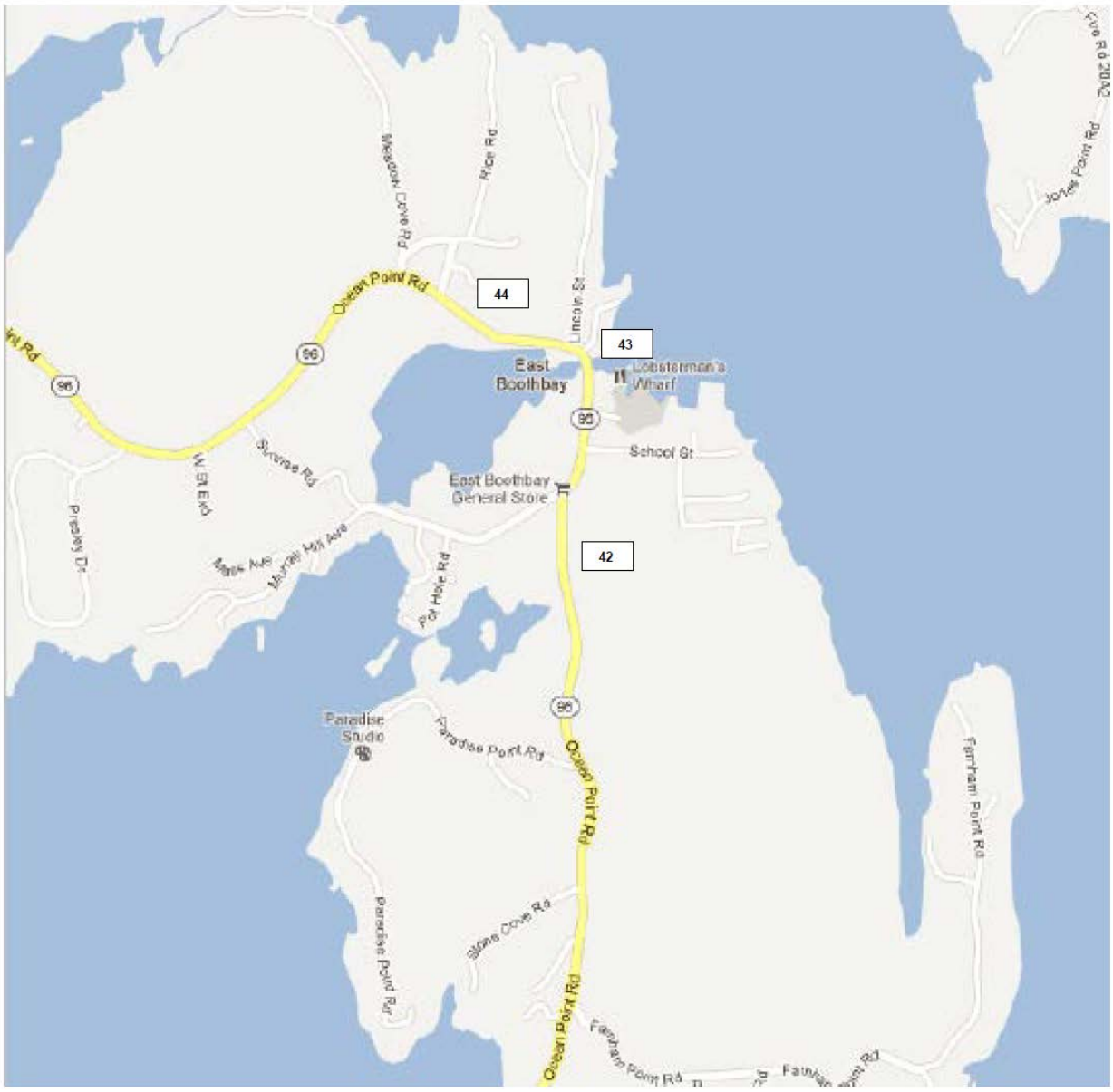


Table 2 Sidewalk Inventory

	Street	Segment		Side	Length	Type	Width	Condition	Comments
		from	to		(feet)		(feet)		
1	Oak	Townsend	Union	W	820	Conc	4	G	
2	Oak	Union	West	W	700	Paved/Conc	3-5	F-G	
3	Oak	West	Howard	W	450	Paved	5	G	
4	Oak	Howard	McKown	W	140	Paver	4	VG	
5	Oak	West	Howard	E	360	Paved	4	G	
6	Oak	Howard	Townsend	E	130	Paver	5	G	
7	Townsend	Oak	Granary (w/gap)	W	200	Paver	5	G	
8	Townsend	Commercial	Eastern	E	2000	Paver	4-8	VG	
9	Townsend	Eastern	S of Ocean Point	E	1020	Paved	4-5	F-G	
10	Townsend	S of Ocean Point	Ocean Point	W	200	Paved	5	G	No X-walk
11	Townsend	Ocean Point	School Complex	W	1350	Paved	5.5	G	No esplanade
12	Todd	McKown	McKown	S	430	Pavers	4-5	G	
13	McKown	E of Todd	Todd	W	30	Pavers	7.5	G	
14	McKown	E of Todd	Todd	E	120	Pavers	4	G	
15	McKown	BB House	Commercial	S	250	Pavers	8	VG	
16	Commercial	BB House	McKown	W	360	Pavers	7-8	VG	
17	Commercial	BB House	Greenleaf	W	420	Stmp Conc	4	VG	
18	Commercial	Greenleaf	Point	W	350	Conc	4	VG	
19	Commercial	Point	Sea	E	520	Paved	3-4	F-G	
20	Commercial	Townsend	Wharf	E	130	Conc	2.5-3.5	G	
21	Wharf	Commercial	wharf	W	100	Paved	4	G	
22	By-way	Wharf	Bridge	E	240	Paved/Pavers	5-12	G-VG	
23	Bridge	Townsend	Atlantic		1200	Paved/Wood/Conc/Pavers	5-7	VG	
24	Union	Townsend	School	S	720	Paved	3-4	P-G	No X-walk
25	Union	School	Atlantic	N	540	Paved	3.5-4	F-G	
26	Kenny Field	N of Union	Union	E	180	Paved	3-4	F	
27	Atlantic	Union	Road's End	E	3560	Paved	3-5	P-G	
28	Eastern	E of Montgomery	School	W	530	Paved	4	G	
29	Eastern	School	Townsend	S	430	Paved	4	G	
30	Howard	Sea	West	E	200	Conc	3.5-4	F-G	
31	West	Oak	Sherman	S	450	Paved	4.5-5	VG	
32	West	Howard	Fullerton	E	360	Conc	4	VG	
33	West	Fullerton	Village	N	1300	Paved	4	G	No esplanade
34	West	Village	Middle	N	170	Conc	4	VG	No esplan/Xwalk
35	Western	Middle	Old Ice House	N	3420	Paved	3-4	F-G	No esplan/Xwalk
36	Western	Old Ice House	Harbor bridge	S	480	Paved	3-4	F	No esplan/Xwalk
37	Lakeview	Western	N of Reed	W	420	Paved	4	F	
38	BB House	S of McKown	Commercial	E	210	Pavers/Paved	4-8	VG	
39	McClintock	Oak	Townsend	N	340	Paved	3.5	G	
40	Alley	Townsend	Bridge Parking Lot		140	Paved	12	VG	
41	Monument	Howard	Todd		150	Pavers	3	VG	
42	Ocean Point	N of Bigelow	E Boothbay bridge	E	1600	Conc	4	VG	
43	Ocean Point	E Boothbay bridge		E	90	Paved	4	G	
44	Ocean Point	Lincoln	Meadow Cove	N	1330	Paved	3-4	P-F	
45	Emery lane	Route 27	End	N	3,500	Paved	4-5	F-G	
				Total -	***31640***	***BBH – 28620***	***BB – 3020***		

Figure 6 shows typical views of Boothbay Harbor sidewalks, which are usually surfaced with asphalt or concrete pavers but include some poured concrete sections. Figure 7 shows the pedestrian bridge, which connects sidewalk systems on the east and west sides of the harbor. Boothbay sidewalks are limited to East Boothbay. A narrow asphalt sidewalk extends from Andersen Road to the bridge in East Boothbay while a new concrete sidewalk was

Figure 6 Typical Boothbay Harbor Sidewalks

Figure 7 Boothbay Harbor Pedestrian Bridge

constructed from the bridge to a point just north of the entrance to Bigelow Laboratory. Figure 8 shows the challenges of pedestrians walking along Route 96 where sidewalks are lacking. In addition, as illustrated in figure 9, Route 96 between Route 27 and East Boothbay has areas of alternating paved and gravel shoulders, posing further difficulties for pedestrians.

Figure 8 Route 96 in East Boothbay with- and Without Sidewalks

Figure 9 Route 96 Between Route 27 and East Boothbay

Boothbay Harbor's extensive village sidewalk system is supplemented by at least 25 crosswalks that are painted annually. Pedestrian areas are also delineated on some secondary streets without sidewalks such as School Street, although pedestrians may not feel constrained to use them (see Figure 10). However, many local roads are narrow with minimal building setbacks so pedestrian sidewalks and utilities sometimes must share the same space (Figure 11).

There are some locations in the two communities that can be used by bicyclists who do not want to use the road travelway. As shown in Figure 12 a limited portion of Route 96 in East Boothbay as well as Route 27 in the Meadow area have paved shoulders. Route 27 has paved shoulders between Boothbay Common and the Edgecomb town line but their widths vary considerably, creating uncomfortable and potentially unsafe conditions for all but well-seasoned bicyclist, as shown in Figure 13.

Figure 10 School Street

Figure 11 Atlantic Avenue

There are many rural roads in both communities that while narrow and curvilinear have low traffic volumes and relatively low speeds, making them desirable for use by pedestrians and bicyclists. Other rural roads, however, represent important links between residential neighborhoods and more developed areas of the communities. While they are also used by pedestrians and bicyclists, they present significant safety concerns to individuals. Examples are presented in Figure 14.

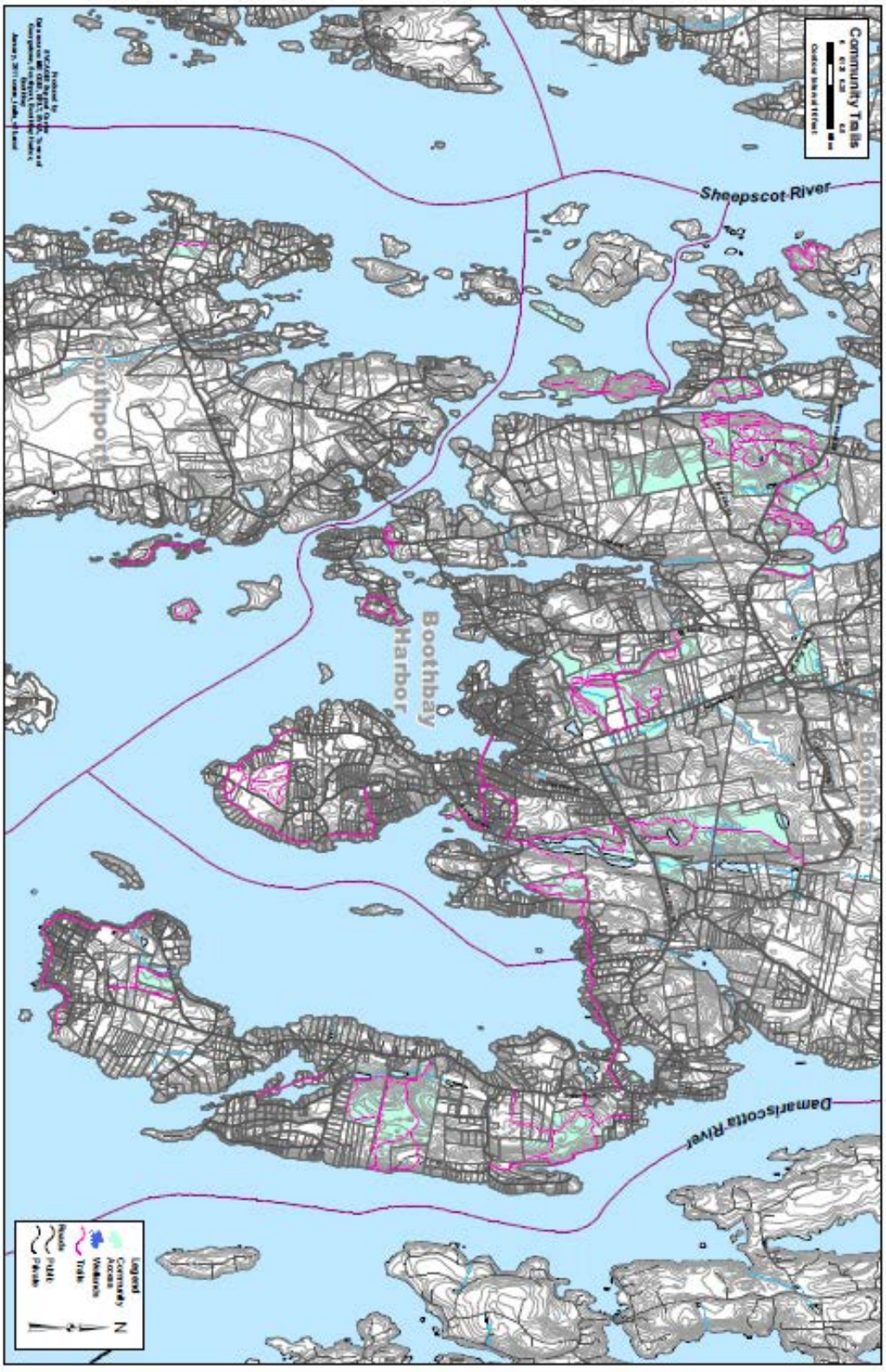
Figure 12 Paved Shoulders on Route 96 in East Boothbay and Route 27 in the Meadow Area

Figure 13 Variable Width Shoulders on Route 27 North of Boothbay Common

Figure 14 Rural Connector Roads

The Boothbay Region Land Trust has been instrumental in developing a network of community trails in Boothbay and Boothbay Harbor as well as the neighboring towns of Southport and Edgecomb. Figure 15 documents all the existing off-road walking trails in Boothbay and Boothbay Harbor. All of the trails are in regular public use and most are official public access trails. The plan also shows parcels of land which are available for community access.

Figure 15 Boothbay and Boothbay Harbor Community Trails



Section 3

The Planning Process

The Boothbay and Boothbay Harbor Boards of Selectmen approved preparation of a joint bicycle-pedestrian plan for the communities and authorized LCRPC staff to assist in soliciting members for a Bike-Pedestrian Committee to oversee the project. Two articles in the Boothbay Register and a news item on the Boothbay Harbor municipal website provided project descriptions and information on how to join the committee. In addition, survey respondents who indicated interest in participating in the project were invited to join the committee. The following community members participated at one time or another in the project:

Fran McBrearty
Mary Neal
Andy Hamblett
Marian Anderson
Andrew Matthews
Rupert Neily
Mike Tomko
Mary Lou Newstead
Debrah Yale
Conrad Dana
Jim Chaousis
Mary Yokabaskas
Ron Bastian
Lisa McSwain
David Eastwood

At the recommendation of the Lincoln County Planner, the committee decided to solicit input from the community via electronic and paper surveys. Both school and non-school residents were surveyed with the committee approving survey questions and formats. Local public schools were contacted to determined there interest in participating in the survey and their preferences for paper or electronic surveys

Survey announcements were carried in the Lincoln County News and Boothbay Register. Each announcement provided links to the school and non-school electronic surveys and information on where to obtain copies of the paper surveys. Paper school surveys were distributed in the Elementary and High Schools and links were provided to the electronic survey. Paper copies of the

non-school survey were made available at the Boothbay Harbor Chamber of Commerce Office, St. Andrews Village, the Boothbay Harbor Library, the YWCA and the Boothbay and Boothbay Harbor town offices. In order to ensure that the public and students had sufficient opportunity to provide input, the survey period ran for three months between May and August, 2012.

At the end of the survey period, survey responses were tallied. One hundred six completed student surveys and sixty-eight non-student surveys were received.

The committee held a meeting on October 15, 2012 to review the results of the survey and prioritize recommended improvements to bicycle and pedestrian facilities in Boothbay and Boothbay Harbor. The committee also discussed other recommendations, all of which served as the basis for the draft Boothbay-Boothbay Harbor Bicycle-Pedestrian Plan as presented to the Boothbay and Boothbay Harbor Boards of Selectmen.

The Boothbay Harbor Selectmen endorsed the plan at their November 14, 2012 meeting and added project #12, construction of a sidewalk on Union Street between Oak Street and Townsend Avenue and improvements to the Oak Street sidewalk between Union and West Streets. These sidewalks were recommended as part of a walkability audit of Boothbay Harbor village conducted by consultant Dan Burden on October 30, 2012.

Section 4

Existing Plans and Ordinances and Budgeting

Boothbay Harbor does not have a current bicycle-pedestrian plan *(obtain copy of current Boothbay bike-ped plan)*. The 2002 Boothbay Comprehensive Plan and the 2006 Boothbay Harbor Comprehensive Plan both include the following policy:

> "Ensure that future development activities contribute (financially or in-kind) to meet the increased demand on municipal service such as public safety, sewer, water, administrative services, education, library, public works, *recreation*, etc."

The Towns of Boothbay, Boothbay Harbor and Edgecomb completed a corridor management plan for Route 27 in 2011. The plan found that "walkways, sidewalks, bike paths, and bike facilities promote health, reduce dependence on automobiles, and provide for increased recreational opportunities" and the plan contained the following recommendations:

- Install sidewalks on both sides of Route 27 from Route 96 to the school complex
- Add sidewalk from the YWCA to Boothbay Center
- Evaluate modifying Common Drive to one-way year-round and add angled parking and sidewalks

Boothbay does not have any provisions or performance standards applicable to sidewalks or pedestrian facilities in its zoning ordinance. The following performance standard is applicable to all development requiring site plan approval in Boothbay Harbor:

> "The site plan must provide for a system of pedestrian ways within the development appropriate to the type and scale of the development. This system must connect the major building entrances and exits with parking areas and with existing sidewalks, if they exist or are planned in the vicinity of the project The pedestrian network may be located either in the street right-of-way or outside of the right-of-way in an open space or recreation areas. The system must be designed to connect the project to residential, recreational, and commercial facilities, schools, bus stops, and existing sidewalks in the neighborhood or, when appropriate, to connect to amenities, such as parks or open space on or adjacent to the site."

The following provision is applicable to subdivision in Boothbay Harbor:

> “Sidewalks or, at the option of the Planning Board, an off-road pedestrian circulation system shall be installed at the expense of the subdivider for all subdivisions that include a new street or extension of an existing street. For subdivisions located within 500 feet of an existing public sidewalk, as measured along a street right of way, the subdivision's sidewalk shall be extended to the public sidewalk at the expense of the subdivider.”

Boothbay Harbor’s performance standards for roads and streets include the following provision:

> “Unless sidewalks do not exist on the project site or adjacent properties or if significant pedestrian traffic is not present or is not anticipated in the future, the Planning Board shall require the installation of minimum four-foot wide sidewalks on one or both sides of a road.”

Section 5

Goals, Objectives, Strategies

Pedestrian/Bicycle Vision for Boothbay and Boothbay Harbor

Boothbay Harbor village has an extensive sidewalk system but major transportation corridors such as Routes 27 north of the Meadow and most of Route 96 lack pedestrian facilities. With the exception of limited areas of paved shoulders, bicycle facilities are absent, requiring bicyclists of all abilities to share most roads with motor vehicles. Even with these important safety considerations, roads in both communities are still attractive to a growing number of bicyclists in the community and those visiting the Boothbay peninsula. For these reasons and others, improved pedestrian and bicycle facilities are important for Boothbay and Boothbay Harbor's future.

Goals, Objectives and Strategies

Goal 1: Safety: Provide safe routes for pedestrians.

Objectives

1A: Create and maintain pedestrian crosswalks in key locations in the communities.

Strategies

- Work with Selectmen, Planning Board, citizens and the business community to identify areas of critical needs
- Improve existing pedestrian crossing locations in the village and on Routes 27 and 96 especially near schools, public facilities, Boothbay Common and commercial centers
- Create new pedestrian crossings wherever new sidewalks are developed.

1B: Ensure safe routes between neighborhoods and along routes with significant bicycle and pedestrian usage.

Strategies

- Install paved shoulders on local roads where feasible when they are slated for reconstruction or major improvements.

- Request that MDOT install paved shoulders wherever feasible when it schedules state and state-aid roads for reconstruction or significant improvements.
- Sweep paved road shoulders at least annually and more frequently during high use periods between May and October.

1C: Use signage and other traffic calming measures to enhance safety on key routes.

Strategies

- Install 'bike route' signs wherever paved shoulders satisfy state standards and install 'share the roads' and ‘bikes may use full lane’ signs where appropriate in other locations regularly used by bicyclists.
- Consider installing traffic calming devices to allow safer pedestrian crossings on Route 27 and elsewhere near the schools, public facilities and similar areas.

Goal 2: Education and Awareness: Educate the public about bicycle and pedestrian facilities and issues, the health benefits of walking and biking and facilitate easy access to information.

Objectives

2A: Build awareness of existing bicycle/pedestrian assets.

Strategies

- Create and maintain a publicly accessible website or link to the town website with local bicycle/pedestrian information and maps.
- Develop and install signage for trails and walking/biking routes.

2B: Provide educational programs about bicycle/pedestrian safety.

Strategies

- Encourage schools to promote bicycling and walking to school and embrace Maine Safe Routes to School programs.
- Engage the Bicycle Coalition of Maine to conduct bike events at schools.
    - Bike rodeos
    - Bike safety classes
    - Bike to school week

- “Walking Bus” program

2C: Hold public events that encourage use of bicycle and pedestrian infrastructure.

Strategies

- Locate bike racks in destination areas in the village, schools and the recreation facilities.
- Partner with the recreation departments, other local recreation organizations and other organizations to hold bicycle and pedestrian friendly events.

Goal 3: Connectivity & Infrastructure: Modify the transportation infrastructure to provide safe bicycle/pedestrian access to and between significant destinations and neighborhoods and enhance connections to the network of other bicycle/pedestrian facilities.

Objectives

3A: Create routes to key destinations.

Strategies

- Develop an off-road connection between the YMCA and the Boothbay Botanical Gardens
- Improve bike and pedestrian access from East Boothbay to Ocean Point

Section 6

Survey Results - Demonstrated Needs

Non-Student Surveys

Seventy-nine percent of the non-student respondents were 50 years or older and only 3% were under 36 years of age. About 30% were retired and respondents were split evenly between male and female. Fifty percent of respondents said they biked daily or weekly while 92% said they walked or ran daily or weekly. Safety or the lack of suitable facilities were the most frequently cited reasons for not biking more often while safety concerns or lack of time were cited most often for not walking or running more. In fact only a quarter of respondents said that lack of adequate facilities prevented more frequent walking or running, probably a reflection of the extensive sidewalk network in Boothbay Harbor village. As presented in Table 3, exercise and recreation were the predominant reasons cited by non-student respondents for walking, running and biking.

Table 3 Non-Student Purpose for Biking, Walking and Running

Purpose of Activity	Percentage of Respondents Citing Purpose	
	Bikers	Walkers, Runners
Exercise	47%	54%
Recreation	44%	49%
Shopping, errands	19%	18%
Visit friends, neighbors	12%	13%
Work	3%	3%
Medical	3%	6%
Do not participate at present	28%	0%

Table 4 presents preferred biking locations and Table 5 preferred walking and running locations. Route 96/East Boothbay was cited by bikers a surprisingly large number of times given the absence of paved shoulders and poor road alignment but this may, in part, reflect its attractive visual attributes, curvilinear roadway and residential atmosphere. Ocean Point was equally popular among bikers, walkers and runners, who once there, enjoy a relatively safe recreational environment. The most popular destination for walkers and runners was Boothbay Harbor village, which has an extensive network of sidewalks. Route 27 between Route 96 and the school complex was also popular among bikers, walkers and runners.

Table 4 Non-Student Preferred Biking Locations	
Location	Number of times cited
Southport	11
Route 27/Hannaford/school field/YMCA	11
Route 96 and east BB	10
Boothbay Harbor village	10
Ocean Point	9
Barters Island Road	5
Adams Pond Road	4
Back River Road	3
Dover Road	3
other roads	22

Table 5 Non-Student Preferred Walking-Running Locations	
Location	Number of times cited
Boothbay Harbor village	20
Ocean Point	14
Route 27N/Hannaford/YMCA	9
BRLT trails	8
Emery Lane	5
Middle Road	4
Route 27S	3
Atlantic Avenue	3
Back River Road	3
Lakeside Drive	3
other roads	29

Tables 6 and 7 list existing routes that have problems. The lack of bike lanes on Route 96 was cited most frequently. Walkers and runners noted the lack of sidewalks on Route 27, a situation that will be at least partly rectified with planned extension of the Boothbay Harbor sidewalk to Boothbay Common.

Table 6 Non-Student Existing Biking Routes with Problems	
Routes	Number of times cited
No bike lane on Ocean Point Road/Route 96	4
No bike lanes above school on Rte. 27	2
Route 27 dangerous	1
River Road narrow	1

Table 7 Non-Student Existing Walking, Running Routes with Problems	
Route	Number of Times Cited
Lack of sidewalks in general	4
Route 27	3
Narrow Atlantic Avenue sidewalk	2
Hannaford signal	2
BB Center	2
Narrow Route 96 shoulders	2

Tables 8 and 9 present routes that would be used if improved. For bikers, the addition of bikers or paved shoulders would result in more usage of Route 27 and Route 96 to Ocean Point. For walkers and runners, the proposed sidewalk to Boothbay Common and the off-road path to Barters Island included in the survey would address two needs. In fact, the Boothbay Common sidewalk was the most requested new sidewalk with a Route 96 sidewalk second. Table 11 identifies problem intersections.

Table 8 Non-Student Bike Routes That Would be Used if Improved	
Route	Number of times cited
Route 27 with bike lanes/shoulders	6
Ocean Point Road/Route 96 with bike lanes/shoulders/safety improvements	6
River Road if widened	3
Route 27 Southport	2
School/Hannaford	2

Table 9 Non-Student Walking and Running Routes That Would be Used if Improved	
Route	Number of times cited
Back Narrows Road with sidewalks	2
Route 27 with new sidewalk	2
YMCA to Botanical Gardens with sidewalk	2

Table 10 Non-Student Suggested New Sidewalks	
Route	Number of times cited
Route 27 between BB Commons and BBH	11
Route 96, Route 27 to Ocean Point, Route 96 to Bigelow	6
Route 22 Industrial Park to BB	3

Table 11 Non-Student Problem Intersections	
Location	Number of times cited
Clipper Mart/Boothbay Common	4
Route 96/Murray Hill Road	2
Route 27/Route 96	2

The survey included questions about two potential off-road biking-walking paths. As shown in Table 12, a strong majority of all respondents favored a route from Boothbay Harbor to Barters Island Road. The response rate for a route between Route 1 and Boothbay Harbor was substantially less, but a majority of those responding to this question favored the route.

Table 12 Non-Student Potential Off-Road Walking and Biking Routes		
Route	Yes	No
Boothbay Harbor to Barters Island Road	51	5
Route 1 to Boothbay Harbor	11	3

Student Surveys

All but two of the student survey respondents attended Boothbay Region Elementary School. Ninety percent of all students bike, with 69% of them biking on a daily or weekly basis. When asked why they did not bike more often, 47% said they lacked sufficient time, 32% had safety concerns and 23% said there were not suitable facilities. Eighty-four percent of student respondents said they walked or ran daily or weekly. Forty-five percent cited lack of time as their reason for not walking more while 7% listed concern for safety and 9% said lack of adequate facilities prevented them from walking or running more often.

Table 13 presents reasons cited by students for biking, walking or running. Given the central location of the school complex, the proportion of students who indicated they walked to school appears low but with the completion of the proposed sidewalk to Boothbay Commons, it will likely increase in the future. Importantly, almost half of respondents cited participation in school sports as a reason for walking or running. This shows the importance of both organized recreational activities and a centrally located school complex in encouraging youth physical activity.

Table 13 Student Purpose for Biking, Walking and Running		
Purpose of Activity	Percentage of Students Citing Purpose	
	Bikers	Walkers, Runners
Exercise	59%	65%
School	7%	10%
Recreation	42%	39%
Shopping/errands	9%	11%
Visit friends, neighbors	33%	40%
School sports team	n/a	45%
Other	1%	1%
Do not participate at present	10%	6%

Table 14 lists the locations where student respondents prefer to bike, walk and run and highlights an important finding of the survey. The overwhelming choice for these activities is at or near the students' residences or other locations that might be considered “safe” (highlighted in yellow). In this context, safe refers to locations relatively free of traffic and visible to “neighborhood eyes”.

Table 14 Student Preferred Biking Locations		
Location	Number of times cited	
	Biking	Walking, Running
Yard, driveway	24	19
Own road	17	17
Boothbay Harbor Village	9	18
Ocean Point	10	7
YMCA		13
Neighborhood	14	14
School	3	12
BRLT trails		7
Southport, Southport Beach	3	3
School Street		4
Footbridge	2	3
Barters Island	3	3
Penny Lane		3
Other locations	28	23

Tables 15 and 16 list streets that are hard to cross and locations for new crosswalks and sidewalks. Given that most few students venture beyond locations that they now consider “safe” and that almost all respondents were elementary school students, it is not surprising that the number of responses to these questions was small.

Table 15 Student Streets That Are Hard to Cross or Where Crosswalk is Needed	
Street	Number of times cited
Route 27 @ Hannaford	4
Route 27 @ school	3
Boothbay Center	3
Townsend Avenue South of Route 96	3

Table 16 Student Suggested New Sidewalks	
Street	Number of times cited
Townsend Avenue (both sides)	3
Samoset Road	2

Tables 17 and 18 combine the results of the student and non-student route preferences. The routes shaded in both tables are those common routes cited most frequently by both student and non-student survey respondents. Table 19 presents the location of bike racks in the project area while table 20 includes recommendations for locations for new bike racks.

Table 17 Most Frequently Cited Bike Routes by Non-Students and Students	
Non-Students	Student
Southport	Yard/driveway
Route 27/Hannaford/school field/YMCA	Own road
Route 96 and east BB	Neighborhood
Boothbay Harbor village	Ocean Point
Ocean Point	Boothbay Harbor village
Barters Island Road	School
Adams Pond Road	Southport, Southport Beach
Back River Road	Barters Island

Table 18 Most Frequently Cited Walking/Running Routes by Non-Students and Students	
Non-Students	Students
Boothbay Harbor village	Yard, driveway
Ocean Point	Own road
Route 27N/Hannaford/YMCA	Boothbay Harbor Village
BRLT trails	Ocean Point
Emery Lane	YMCA
Middle Road	Neighborhood
Route 27S	School
Atlantic Avenue	BRLT trails
Back River Road	Southport, Southport Beach
Lakeside Drive	School Street

Table 19 Bike Rack Inventory
School Complex
Hannaford
Waterfront Park (2)
Coastal Maine Botanical Gardens
Bigelow Laboratory
Meadow Mall

Table 20 Potential New Bike Rack Locations
YMCA
Library
Boothbay Town Office
Clifford Park
Barrett Park
Pedestrian Bridge (west side)
Dept. of Marine Resources

Section 7

Proposed Facilities and Upgrades to Existing Facilities

The following is a *prioritized* list of recommended new facilities and improvements to existing facilities. In addition to these facilities, it is recommended that suitable signage such as that presented in Figure 16 be installed on all applicable roads.

1. Route 27 Sidewalk Extension between the YMCA and Boothbay Center

A sidewalk extension between the YMCA and Boothbay Common is now being engineered by MDOT. This project includes a further extension of this sidewalk to Clifford Park, a popular youth recreational facility just north of the municipal complex. This project would allow a safe pedestrian connection between the schools, YMCA and the park and represents an important link in the overall peninsula pedestrian network.

2. Completion of Paved Road Shoulders on Route 96 between Route 27 and East Boothbay

Route 96 is the only direct pedestrian or bicycle connection between Boothbay Harbor and East Boothbay. Paved shoulders now mostly exist on the Boothbay Harbor "built" portion of Route 96 but they are absent on the Boothbay "unbuilt" portion. Paved shoulders for the entire length of Route 96 to East Boothbay would substantially improve pedestrian safety and allow less experienced bicycle users to ride along the roadway.

3. Route 27 Between Boothbay Harbor Village and the Southport Bridge.

This portion of Route 27, which includes Western Avenue and a portion of West Street, is a key route for bicyclists travelling to and from Southport and is widely used by pedestrians. It includes a sidewalk, which, due to right-of-way constraints, extends along only a portion of the route. The route includes several locations with combined horizontal and vertical curves that significantly limit visibility of bicyclists and pedestrians to motorists. Proposed improvements would include widening of the travel way or paved shoulders wherever possible and installation of signage alerting motorists of the potential for pedestrians or bicyclists sharing the roadway in locations with limited visibility.

4. Route 96 Between East Boothbay and Ocean Point

Route 96 south of East Boothbay has very narrow or non-existent shoulders, none of which are paved. A newly constructed sidewalk extends about a quarter of the way to Ocean Point, but thereafter pedestrian access further south is greatly limited. Bicyclists must share the narrow roadway with motor vehicles in many locations with limited visibility due to horizontal and vertical curves. This situation is compounded by both persistent drainage and pavement conditions that present additional challenges to bicyclists.

Even with these limitations, Ocean Point is one of the prime destinations in the mid-coast because of its combination of easily accessible bold coast and oceanfront parking so the roadway is still regularly used by experienced and casual bicyclists and pedestrians. This project would involve installing paved shoulders where possible, correcting drainage problems, establishing a more frequent paving schedule and installing bicycle and pedestrian warning signs in applicable locations.

5. Off-Road Connections Between and YMCA and the Coastal Maine Botanical Gardens

Annual visits to the Coastal Maine Botanical Gardens have increased from 40,000 in 2007 to 90,000 in 2010 and visitation in future years is expected to continue this steep climb. Because of its location off Barters Island Road, however, it is not easily or safely accessible by pedestrians and casual bicyclists. This project involves a mostly off-road multi-use path connection between the YMCA and school complex off Route 27 and the gardens campus.

6. Route 27 @ School Complex Intersection Improvements
7. Route 27 @ Hannaford Intersection Improvements
8. Boothbay Common Intersection Improvements

All three projects involve improvements to existing pedestrian crossing areas. There is a crosswalk at the school complex that is manned by a police officer during times when students are likely to be present but it is not readily visible to traffic, especially from the north, and use during times when police are absent is problematic. This project would involve enhancing its visibility and reducing the width of the crossing, possibly by installing bumpouts.

As part of the construction at the Meadow Mall, the developer is improving the pedestrian landing at the northerly end of the Route 96 crosswalk. Additional improvements to reduce the length of the Route 27 crosswalk may be warranted.

Seven driveways and six roads enter or exit Route 27 between the Clipper Mart and the southerly exit of Common Drive, resulting in many conflicting traffic movements. Because vehicles often experience significant delays in entering Route 27, they tend to accelerate through this section of roadway, posing safety concerns for pedestrians using the two marked crosswalks. The Route 27 Corridor Management Plan recommended that MDOT conduct an engineering study of the Boothbay Common area, including assessing the potential feasibility of a roundabout, to better organize traffic flow and improve pedestrian safety.

9. Route 27 Between Boothbay Center and the Edgecomb Town Line

This portion of Route 27 is used extensively by local bicyclists trying to connect between various route loops to the west and by touring bicyclists traveling from the north because it is the only direct route to Boothbay Harbor, Ocean Point and Southport. Existing paved shoulder width varies from area to area and side to side with some widths as little as 1.5 feet. This project involves increasing the minimum paved shoulder width to four feet.

10. River Road

This project would involve installing appropriate signage and constructing paved shoulders when the road is next scheduled for improvements.

11. Atlantic Avenue Sidewalk

The existing Atlantic Avenue sidewalk varies from 3-5 feet in width and surface quality from poor to good. Deteriorated sections are mostly where grades are significant or where the sidewalk is cut into steep sideslopes, making improvements difficult. This project would involve widening the sidewalk to a consistent five feet, improving surface conditions and reducing steep grades. Alternatively, consideration should be given to moving the sidewalk to the west side of Atlantic Avenue to accommodate the significant majority of users.

12. Union Street and Oak Street Sidewalks

Pedestrians on Townsend Avenue now must walk in the Union Street travelway to reach the Oak Street sidewalk. In addition, the Oak Street sidewalk is narrow, is elevated above Oak Street in several locations and has an irregular surface and some areas of steep slopes. This project would involve constructing a short sidewalk segment on Union Street between Townsend Avenue and Oak Street and reconstructing the Oak Street sidewalk to make it safer and more convenient to use.

Figure 16 Recommended Signage

Section 8

Other Recommendations

Sidewalk Maintenance

During the course of reviewing survey responses and preparing this plan, it became quite apparent how important the region's sidewalk system is to the community. The 6.0-mile sidewalk network is used daily by many residents yet there are some important gaps in Boothbay. For instance, it is not possible to walk safely from the school complex to Boothbay Center or to the Coastal Maine Botanical Gardens and along much of Route 96.

Even with these gaps, however, residents use the sidewalk system year round. Therefore, to adequately meet the community's needs, it must do so on a year round basis. This means that sidewalks must be plowed and sanded in winter at the same time the village's streets and Route 96 are sanded and plowed. The committee, therefore, suggests that the Comprehensive Plan Committee consider recommending creating budget line items in both towns devoted to summer and winter sidewalk maintenance and repair.

In a related matter, property owners should be prohibited from maintaining their properties in a manner that adversely affects adjacent sidewalks, such as plowing snow onto sidewalks and failing to trim back vegetation overhanging sidewalks.

Ordinances and Policies

The Committee recommends that the Boothbay-Boothbay Harbor Bicycle-Pedestrian Plan be incorporated as an amendment to the comprehensive plans of both communities. The Committee also suggests that the Comprehensive Plan Committee consider recommending that the Boothbay Land Use Ordinance should be amended to require the construction of new bicycle and/or pedestrian facilities and their connection with existing or planned facilities for developments that are in proximity to planned facilities or that are anticipated to create demand for pedestrian and/or bicycle facilities.

Neither town has an official policy for construction or maintenance of paved road shoulders. Such activities are currently undertaken on an as-needed basis by the town as funds are available. As new pedestrian and bicycle facilities are constructed in the community, a formal maintenance policy will be an important step in ensuring that the spending of scarce local financial resources

on the system will be optimized. The Committee suggests that the Comprehensive Plan Committees consider recommending the following:

- Fund annual budgets for improvements to existing bicycle and pedestrian facilities and construction of new facilities on Town owned roads
- Establish dedicated annual maintenance budgets, including striping of crosswalks, winter maintenance and spring sweeping of Town owned roads. This could include the purchase of equipment specifically dedicated to winter sidewalk maintenance.
- When any state or state-aid road is reconstructed, the shoulder and travel lanes be sufficiently dimensioned to accommodate pedestrians and bicyclists.
- New bike racks should be installed in locations listed in Table 20.

Section 9

MDOT Funding Sources for Bicycle and Pedestrian Improvements

The following MDOT can provide funding for bike and pedestrian improvements.

Quality Communities Program

Transportation Enhancement Program

- 80/20 funding
- safety and education programs
- bike and ped facilities
  - paved sidewalks and shoulders on minor collectors or local roads
  - new sidewalks on arterials and major collectors with closed drainage
  - bike lane stripping
  - bike parking facilities and bike racks

Safe Routes to School

- up to 100% funding
- infrastructure within 2 miles of schools to substantially improve safety of students to walk or bike to school
  - sidewalks
  - traffic calming
  - crossings
  - on-street bike facilities
  - off-street bike and pedestrian facilities
  - traffic diversion near K-8 schools

Go Maine

- 80/20
- bike racks with capacities of 2, 6 or 8 bikes