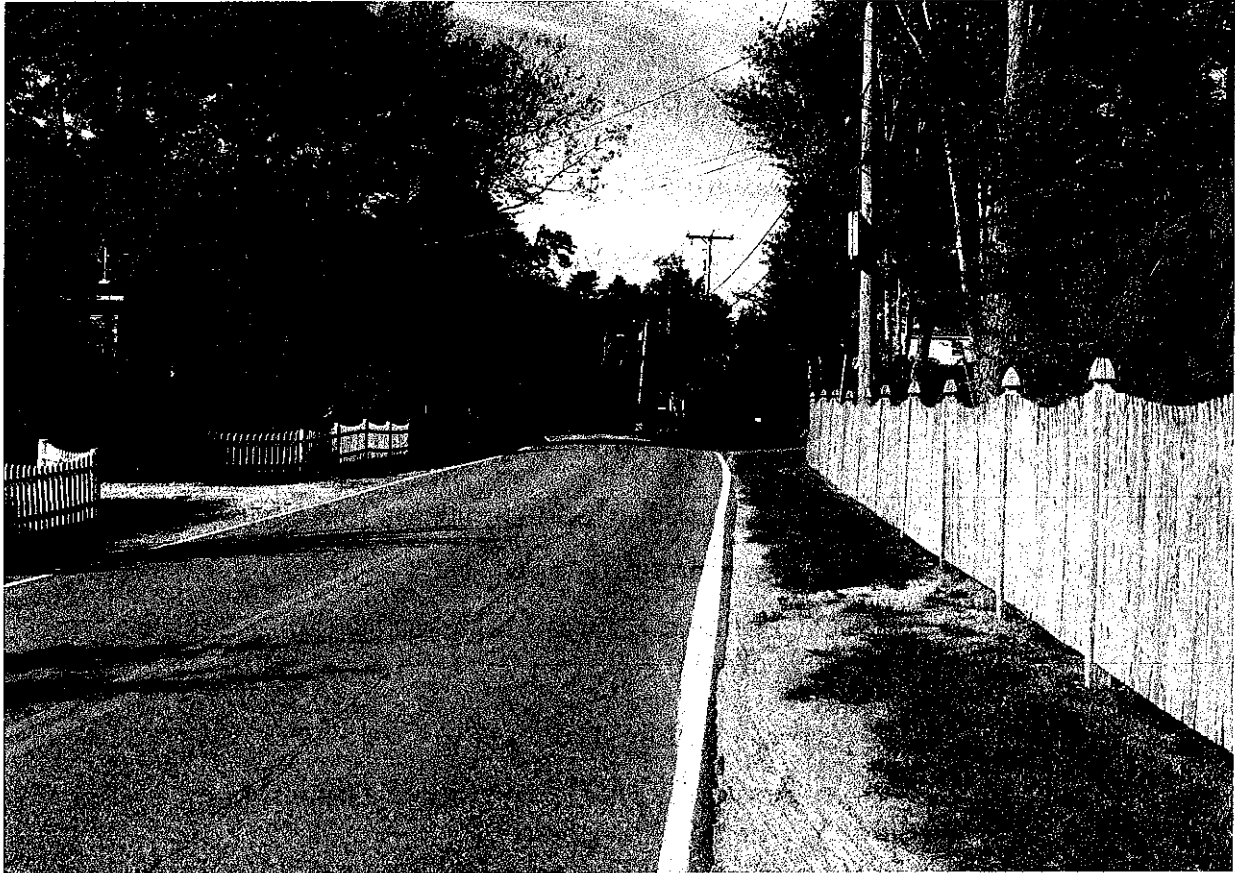


Boothbay-Boothbay Harbor

Bicycle-Pedestrian Plan

October 2012



Prepared by

Boothbay-Boothbay Harbor Bicycle-Pedestrian Committee

and

**Robert F. Faunce
Lincoln County Planner**

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1. Bike-Ped Surveys

- 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.

Figure 1 Boothbay and Boothbay Harbor History of Growth Maps

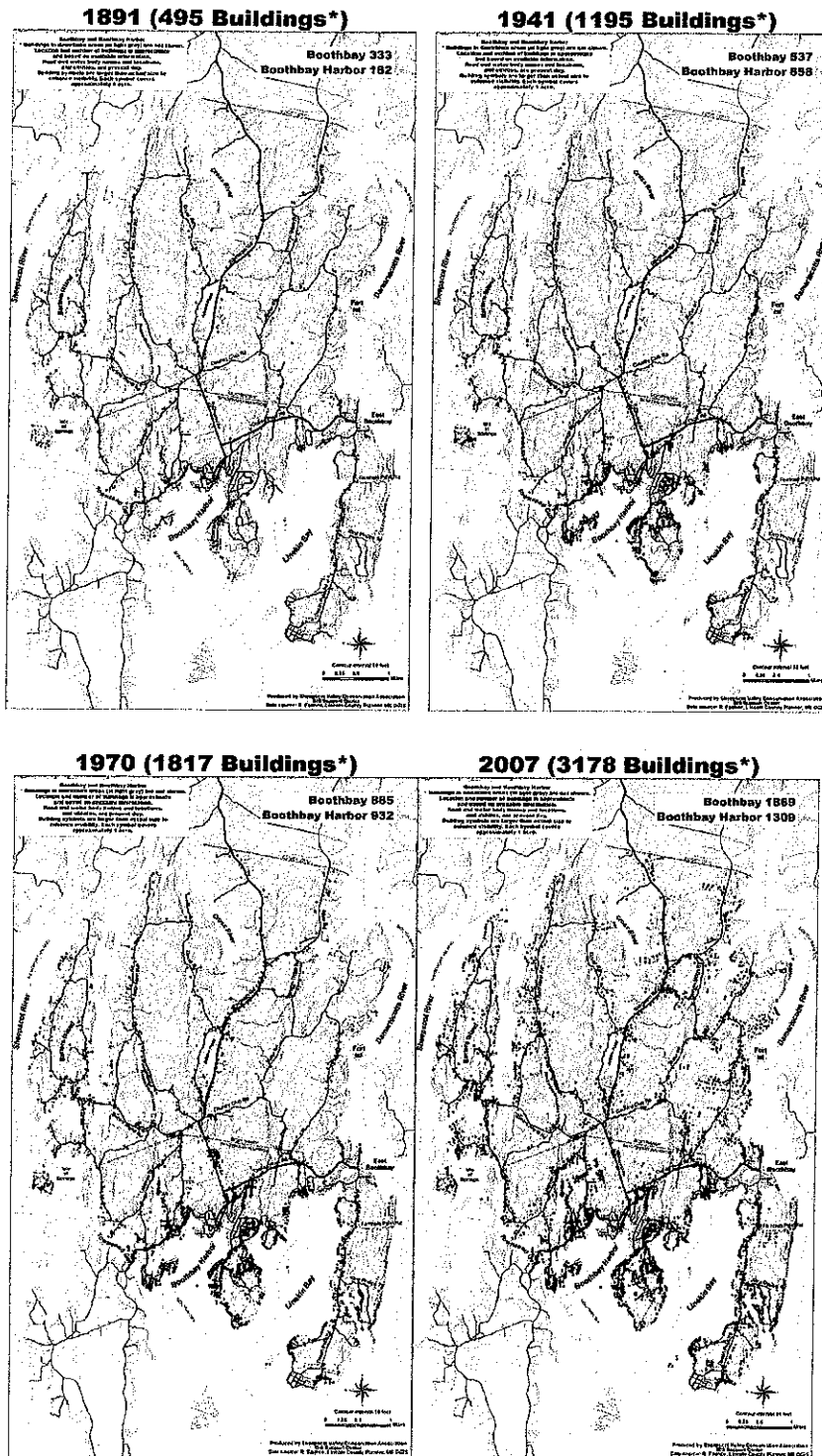


Table 1 Boothbay and Boothbay Harbor Traffic Counts

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
Barbers 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 4 Sidewalks and Crosswalks in Boothbay Harbor and Boothbay

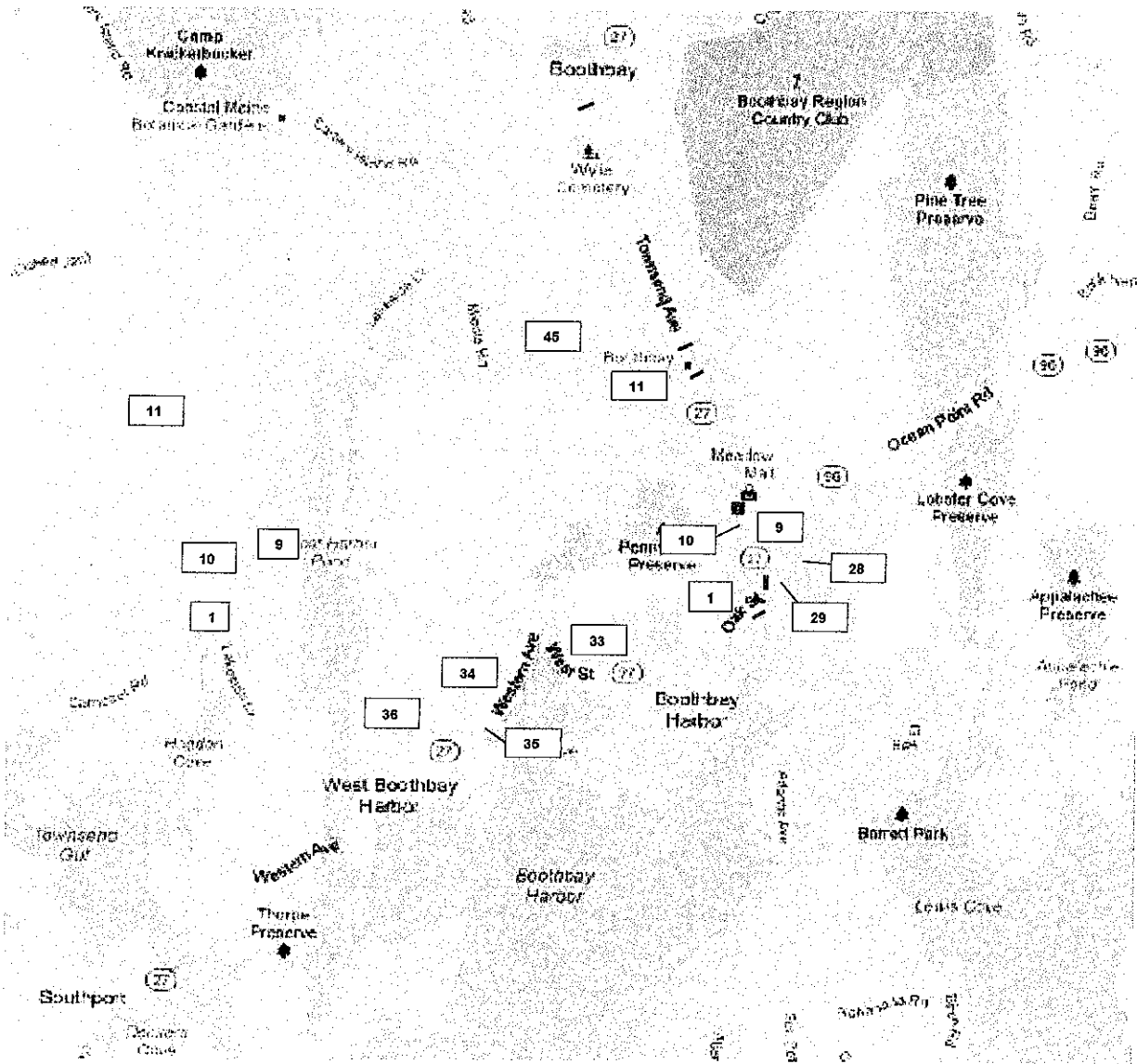


Table 2 Sidewalk Inventory

	Street	Segment		Side	Length (feet)	Type	Width (feet)	Condition	Comments
		from	to						
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	4-6	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	F-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	Abey	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 8 Route 96 in East Boothbay with- and Without Sidewalks

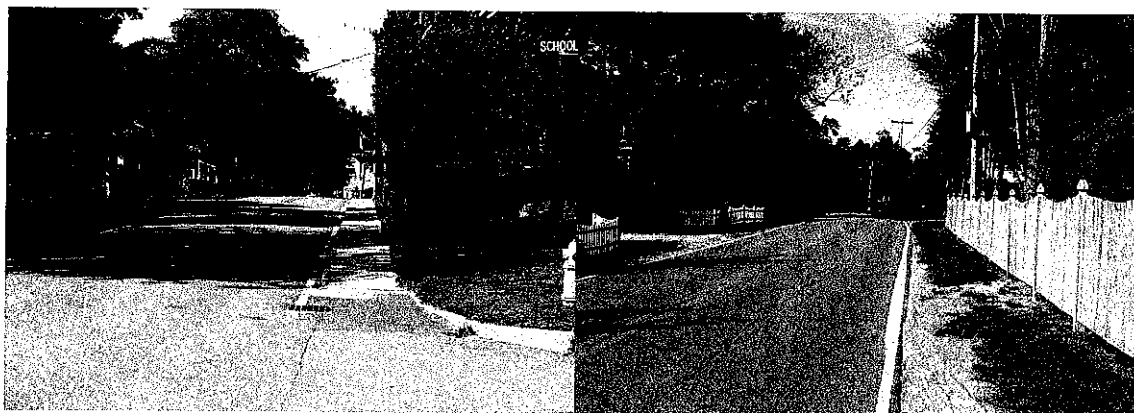


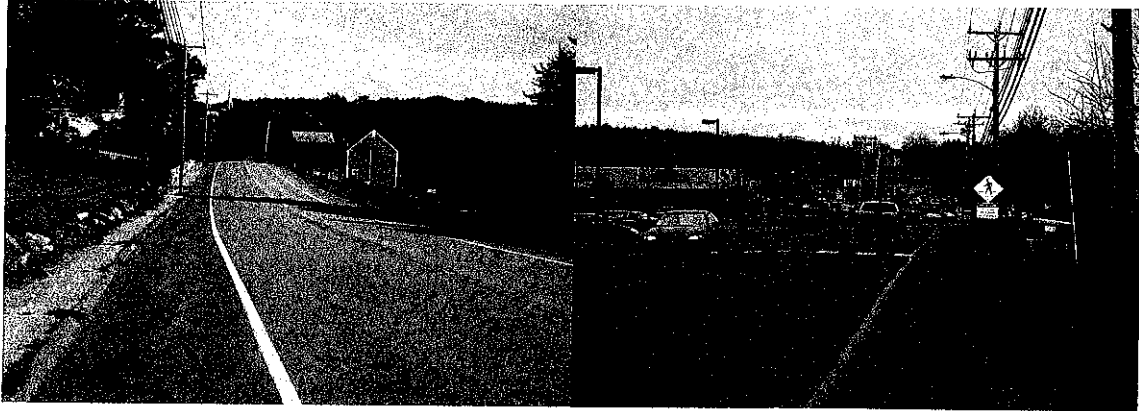
Figure 9 Route 96 Between Route 27 and East Boothbay



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 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 15 Boothbay and Boothbay Harbor Community Trails



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 final Boothbay-Boothbay Harbor Bicycle-Pedestrian Plan as presented in this document.

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.”

- 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

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.

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.

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 Barthers 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.

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

Route	Number of times cited
Back Narrows Road with sidewalks	2
Route 27 with new sidewalk	2
YMCA to Botanical Gardens with sidewalk	2

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

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".

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
Barbers 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 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

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 Barbers 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.

Figure 16 Recommended Signage



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.