

TOWN OF BOWDOINHAM



COMPREHENSIVE PLAN

*ADOPTED JUNE 11, 2014
AT ANNUAL TOWN MEETING*

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VISION STATEMENT

In the year 2024 Bowdoinham is pretty much the same as it is today, only better.

The town's rural character, rich history, and natural beauty are preserved. The people here are peaceful, supportive, and tolerant as they have been for generations. The local economy is strong and relatively self-sufficient.

The village is ever more attractive and lively. There are more businesses, another restaurant or two, and sidewalks. New development in the village is in character with the historic buildings and served by enhanced infrastructure.

More of the land is in agricultural use and the food produced is healthy and safe. Bowdoinham farms supply an impressive proportion of local food needs and bring significant money into the community from away. Woods, wetlands, and waterfronts are highly valued as in the past. Continuing a tradition of thoughtful management, Bowdoinham's wildlife habitat and outdoor recreation areas, including Merrymeeting Bay, are treasured by locals and visitors alike. Bowdoinham's country roads continue to be lined with scattered houses, fields, forests and small businesses. New development and stores are in keeping with local and historic character.

We are a hugely diverse mix of blue collar and white collar, young and old, liberal and conservative, from here and from away, and are proud to support each other and our community in the face of challenges. Artists, musicians, and craftspeople are abundant and appreciated. Small businesses and entrepreneurship are encouraged. Though proud to be local, Bowdoinham people are connected to the region and to the world. There is high quality cell phone connectivity and internet access throughout the town.

Bowdoinham is a great place to live, work, play, raise kids and grow old. Specific initiatives are targeted to help youth love, appreciate and engage with their community, and to help elderly live here comfortably and securely. Affordable housing, among a diversity of housing options, is available for young and old.

Specific institutions, central to the appeal of community, are maintained and nurtured; for instance, Town Meeting, Bowdoinham Community School, the Library, the Recycling Barn and Program, the Waterfront Park, the Farmers Market, and the Town Hall.

In the year 2024, Bowdoinham has adapted to global change yet retained its human scale and historic values.

GOALS & RECOMMENDATIONS

Economy

Bowdoinham's economy is made-up of small businesses, the majority of which are home-based businesses that are located through-out Town.

Goals

1. To promote an economic climate that increases local job opportunities, our sense of community and overall economic well-being.
2. To encourage small businesses & entrepreneurship.
3. To encourage development that enhances our village and community.
4. To enhance our economic opportunities by making the most of our recreational, agricultural, natural, marine, historical and cultural resources.

Key Issues

The key issue for Bowdoinham is two-fold:

How can the Town best support local businesses? What do our businesses need?

How can the Town grow the consumer base for our local businesses?

Recommendations

1. Support and promote eco-tourism, agri-tourism, historic tourism and the arts.
2. Develop a brand and branding strategy then promote through multiple media types.
3. Attract complimentary businesses into Town.
 - a. Create and promote an economic brochure highlighting the benefits of doing business in Bowdoinham.
4. Create and distribute a new business introductory package.
5. Create and distribute a new resident package that includes a Bowdoinham business directory and Bowdoinham business coupons.
6. Support the work and mission of the Community Development Advisory Committee.
7. Support and promote existing businesses and community groups.
8. Provide resources and education for starting and running a small business.
9. Support and promote business workshops for Bowdoinham businesses.
10. Plan for and utilize TIF funds to support our economic goals.
11. Plan for and develop infrastructure to support business development in the village including a public wastewater system, public bathrooms, sidewalks, bike lanes and public parking.
12. Plan for and develop communication, internet and energy infrastructure to support business development throughout Bowdoinham.

13. Develop and implement a village beautification plan to make changes to the village such as lighting, landscaping, public greenspaces and other amenities to help attract new businesses and visitors alike.
14. Develop signage for the village and businesses.
15. Implement Waterfront Plan.
16. Implement Walkable Village Plan.
17. Support the development of and implement the Merrymeeting Trail.
18. Participate in regional economic development efforts.

Agriculture

Agriculture has always been an important part of Bowdoinham's history and continues to be one of its strong economic sectors.

Goals

1. To enhance the viability of agriculture so that it will remain an economic strength for future generations.
2. To promote buying local foods and enhance opportunities to obtain local foods.
3. To safeguard our agricultural resources.
4. To encourage economically viable, ecologically sound and socially responsible agriculture.

Key Issues

How can the Town support and encourage the growth of its agricultural sector?

Access to land and good soils is a necessity.

Town programs and policies need to support agricultural uses.

Recommendations

1. Recognize farmland based on current use and prime farmland soils, not just farmland enrolled in the Farmland Tax Program.
2. Review the Farmland Taxation Program to ensure program is beneficial to farmers.
3. Encourage owners of productive farm land to enroll in the Farmland Taxation Program.
4. Adopt and encourage participation in the voluntary Municipal Farm Support Program.
5. Amend the Land Use Ordinance to minimize non-agricultural development on prime farmland soils.
6. Create mechanisms to protect active agricultural activities from new non-agricultural development.
7. Consult with Department of Agriculture, Conservation and Forestry when developing any land use regulations pertaining to agricultural management practices to ensure regulations are agriculture friendly.
8. Encourage and support agricultural businesses and productive agriculture operations.
9. Promote and support agri-tourism.
10. Promote the benefits of agriculture.

11. Explore the interest in and benefit of creating and marketing a Bowdoinham brand for agricultural products.
12. Support the development of new markets for Bowdoinham agricultural products.
13. Encourage and support getting local food to children, elderly and low income people, including but not limited to, distribution through the schools, a local food pantry, and education in the preparation and benefits of eating healthy local foods.
14. Support the Bowdoinham Farmers' Market and other local venues to enhance opportunities to obtain local foods.
15. Support the growth of an organic farm cluster to enhance our regional agricultural opportunities.
16. Encourage, support and participate in regional agricultural projects that support the growth of agriculture in Bowdoinham.
17. Encourage Maine Department of Inland Fisheries & Wildlife and other landowners with prime farmland soils to lease the land for agricultural uses.
18. Encourage and support the preservation of prime farmland.
19. Ensure that all farmers and those living on prime agricultural soils or historical farm properties are aware of all options for protection and maintaining their farms as productive farms.
20. Encourage and support the creation of a gleaning group.
21. Encourage the formation of a farmers' alliance/group or Local Food Council and support their work.
22. Support agricultural educational opportunities.
23. Create farmer resource package for the website and distribution to farmers.

Forest Resources

Bowdoinham is a rural town with young forests that cover approximately 56% of its land.

Goals

To promote forest management, forest activities and stewardship that provide an economic benefit and supports our recreational opportunities, water quality and wildlife habitat.

Key Issues

Our limited and fragmented forest resources are valued as scenic, economic, environmental and recreational resources. How do we encourage private property owners to manage their forest land in a way the meets these goals? How do we encourage good forest management practices?

Recommendations

1. Provide for and support forest management, resources, educational opportunities and good stewardship.
2. Create a resource package that includes various options for forest management, such as types of timber harvesting, wildlife habitat enhancement possibilities and recreational opportunities for the website and distribution to wood lot owners.

Natural Resources

Bowdoinham's rural setting is home to many natural resources, from wildlife habitats to unique natural areas and beautiful scenic vistas.

Goals

1. To manage and protect critical natural resources, including water resources, wildlife and fisheries habitats, shorelands, scenic vistas, and unique natural areas.
2. To promote good stewardship of Merrymeeting Bay watershed and all the natural, marine, cultural and historic resources that Merrymeeting Bay provides.

Key Issues

We need to know where our resources are so that we can adequately support and protect them and educate others about them.

Recommendations

1. Explore creating a Conservation Commission to serve the Town and our resources.
2. Promote good stewardship, support and provide educational opportunities and resources.
 - a. Develop brochures about our natural resources.
 - b. Create educational signage for important natural resource areas.
3. Coordinate and partner with other municipalities, Friends of Merrymeeting Bay, and other organizations to protect natural resources.
4. Ensure that the Town's Land Use Ordinance is consistent with applicable State laws and rules regarding critical natural resources.

Water Resources

Bowdoinham prides itself on its location on Merrymeeting Bay, Kennebec River, Abagadasset River, Cathance River, West Branch and many streams; all of which have played an integral role in Bowdoinham's history.

Goals

To manage and protect our water resources, including aquifers, wetlands, ponds, streams, rivers and Merrymeeting Bay.

Key Issues

How do we protect our water resources for the future?

Recommendations

1. Promote good stewardship of our water resources.
2. Provide for and support educational opportunities and resources.
 - a. Provide shoreland zoning workshops and materials for property owners.
 - b. Support and provide educational opportunities and resources to reduce water pollution.
3. Protect current and potential water sources.
4. Cooperate with other municipalities, Bowdoinham Water District, Friends of Merrymeeting Bay, and other organizations to protect water resources.
5. Ensure the Town's Land Use Ordinance to be consistent with Maine Stormwater Management law and rules.
6. Amend the Town's Land Use Ordinance to incorporate low impact development standards.

Historic & Archaeological Resources

Bowdoinham has a rich history; dating back to before its settlement as a town in 1782.

Goals

To recognize, protect and encourage preservation of our archaeological and historic resources.

Key Issues

We need to know where our resources are so that we can adequately support and protect them and educate others about them.

Recommendations

1. Provide for and support educational opportunities and resources.
2. Promote the maintenance and restoration of historic buildings.
3. Support the activities and mission of the Bowdoinham Historical Society.
4. Survey and inventory our resources.
 - a. Support the preservation of these resources.
5. Create a cemetery map.
6. Host an annual Cemetery Clean-up Day.
7. Maintain provisions in the Town's Land Use Ordinance to protect the significant historic and archaeological resources in the community to the greatest extent practicable.

Recreation

Recreation is an important aspect of life in Bowdoinham that greatly adds to Bowdoinham's quality of place.

Goals

1. To promote and protect the availability of outdoor recreational opportunities.
2. To plan for, develop, promote, and encourage recreational opportunities for all ages.
3. To plan for and develop regional recreational opportunities and facilities.

Key Issues

Additional resources are needed to increase the current level of services especially for teens and the elderly.

Recommendations

1. Support the Town's Biking, Walking, and Paddling Group:
 - a. Promote biking, walking and paddling in Bowdoinham.
 - b. Develop opportunities and access for biking, walking and paddling.
 - c. Host an annual race.
 - d. Develop a trail plan.
 - e. Work to develop the Merrymeeting Trail
 - f. Work with clubs to sponsor bike tours in and through Bowdoinham.
2. Promote recreational opportunities in Bowdoinham.
3. Identify and promote opportunities on publicly owned lands.
4. Support the Bowdoinham Snowbirds.
5. Investigate and develop a safe location for swimming.
6. Encourage landowners to allow access for hunting, fishing, snowmobiling and trails.
7. Support the creation of the Merrymeeting Trail.
8. Maintain an inventory of our recreational resources.
9. Investigate the feasibility of, and opportunities to develop a community center.
10. Develop, support & promote indoor recreation opportunities.
11. Develop adult sports leagues.
12. Host board and card game events.
13. Develop and promote boating opportunities.
14. Investigate and develop a sledding hill.
15. Maintain and upgrade recreational facilities as needed.
16. Develop additional safe access points to Merrymeeting Bay and the rivers.
17. Support the development of a skate park.
18. Support our Committee on Aging in creating recreational activities for our seniors.
19. Explore and create (if possible) a new committee, possibly an Active Community Environment Team to implement our strategies for recreation.

Housing

Currently, Bowdoinham is made-up of predominantly single family houses.

Goals

1. To encourage and promote safe and affordable housing opportunities, which are consistent with the other goals within this plan.
2. To allow a diversity of housing types.

Key Issues

We need more affordable housing, seasonal housing for our summer workforce and assisted-living housing for our elderly.

Recommendations

1. Promote energy efficient housing.
2. Allow diverse housing types within the Town's ordinances including cluster and co-housing.
3. Support efforts to develop affordable, seasonal and workforce housing.
4. Support the development of housing opportunities for the elderly and disabled, including assisted living.
5. Support efforts to help the elderly and disabled remain in their homes.

Transportation

Goals

1. To plan for and develop an efficient transportation system that accommodates anticipated growth, economic development and changes in the State's transportation policies.
2. To implement and update a road maintenance plan.
3. To promote the development of and encourage the use of alternative forms of transportation.

Key Issues

Transportation is expensive making funding and state policies the key transportation issues.

Recommendations

1. Develop additional parking in the village.
2. Encourage Maine Department of Transportation to develop additional parking at the Park and Ride.
3. Encourage Maine Department of Transportation to reconstruct Route 24 and its intersections with Ridge Road, White Road and Carding Machine Road.
4. Encourage Maine Department of Transportation to create bike lanes on Route 24.
5. Encourage Maine Department of Transportation to create sidewalks on Routes 24, 125 and 138 in the village area.
6. Develop bike paths and bike lanes on Town roads.
7. Support the development of the Merrymeeting Trail.
8. Develop sidewalks throughout the village as approved in Walkable Village Plan.

9. Implement and update the Town's Transportation Vision Statement.
10. Promote, encourage and support public transportation opportunities.
11. Promote, encourage and support alternative transportation.
12. Encourage train service in Bowdoinham.
13. Promote, encourage and support ride sharing.
14. Maintain the Road Maintenance Plan.
15. Participate in regional and state transportation efforts.
16. Develop transportation opportunities to serve the elderly, as needed.
17. When contemplating infrastructure improvements, consider the effects of sea level rise to ensure more resilient systems.

Public Facilities and Services

Goals

1. To plan for and develop an efficient system of public facilities and services that supports current needs, anticipates growth and promotes economic development.
2. To preserve and enhance the community institutions which make Bowdoinham special.
3. To implement existing Town plans, such as the Waterfront Plan and Walkable Village Plan.

Key Issues

The key issue in providing public facilities and services is obtaining funding.

Recommendations

1. Develop internet infrastructure to serve all Bowdoinham residents.
2. Develop additional public access internet service.
3. Encourage the extension of cable service to all Bowdoinham residents.
4. Encourage the State to allow greater competition between cable companies.
5. Investigate wastewater disposal options to serve the village area.
6. Develop public bathrooms and pump facilities at Maily Waterfront Park.
7. Investigate the development of natural gas infrastructure.
8. Support the mission and work of all Town Committees.
9. Encourage residents to join the Fire and EMS Departments.
10. Encourage residents to improve access to and identification of their homes for emergency services.
11. Promote, support and encourage recycling.
12. Ensure that Town Boards receive proper training to perform their duties.
13. Coordinate with other municipalities to enhance services.
14. Develop resident & new resident packages to inform residents of recreation opportunities, local businesses, Town services and other resources.
15. Provide public facilities and services in a manner that promotes and supports growth and development in identified growth areas.
16. Develop a financial model of how development impacts public services.

Fiscal Capacity and Capital Investment Plan

Goals

To develop and implement a plan to finance an efficient system of public facilities and services that support current needs, anticipates growth, promotes economic development and accommodates State policies.

Key Issues

Funding and planning to get the most "bang for a buck."

Recommendations

1. Maintain healthy fund balance.
2. Anticipate further reductions in state support.
3. Plan and save for capital projects.
4. Maintain the investment and purchasing plan.
5. Explore opportunities to work with other municipalities to plan for and finance shared or adjacent capital investments to increase cost savings and efficiencies.
6. Explore grant opportunities to assist in the funding of capital investments.

Land Use

Goals

To encourage orderly growth and development in appropriate areas, while protecting the town's rural character, and making efficient use of public services.

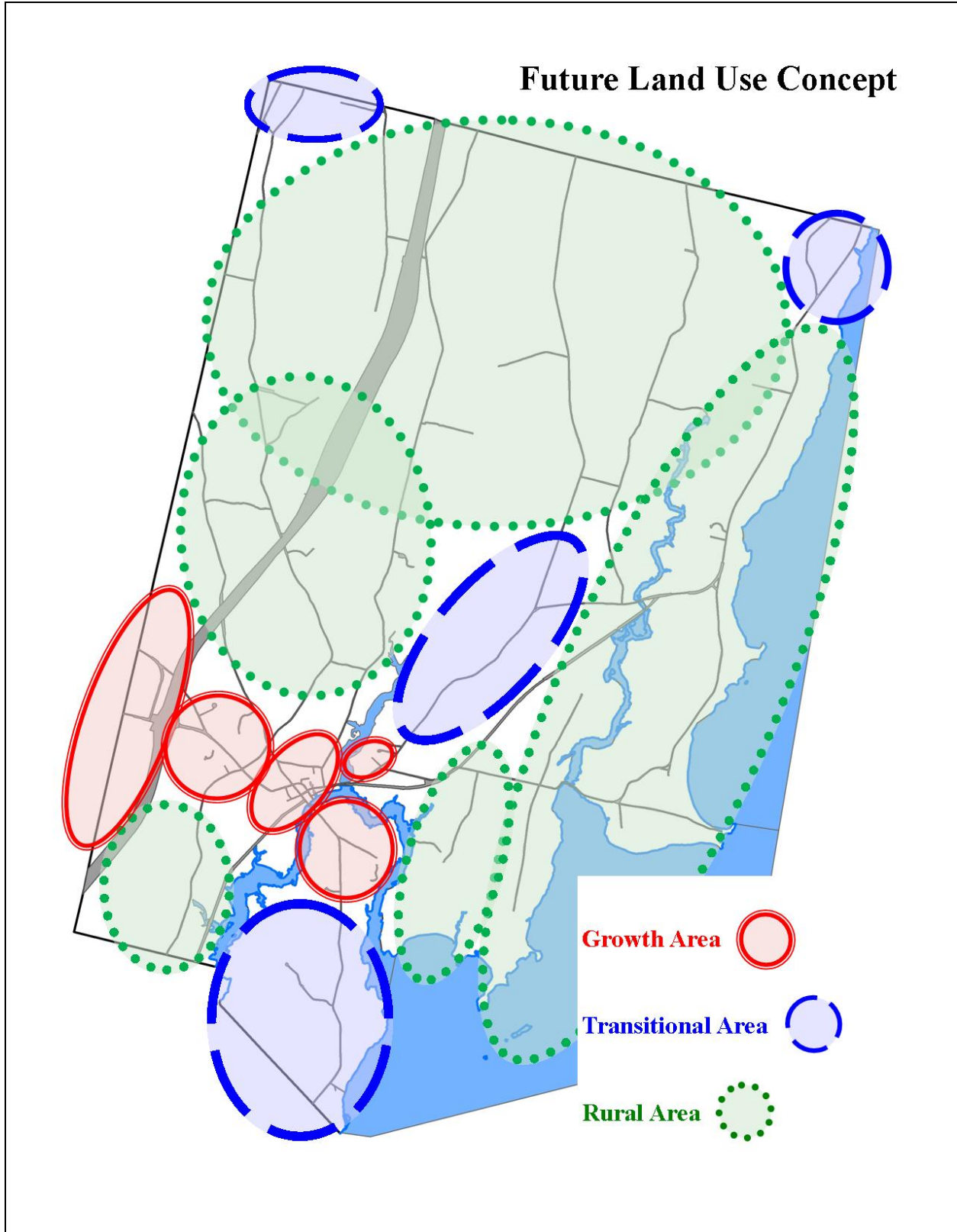
Key Issues

How do we maintain a balance among protecting our resources and quality of place and property owners' rights, while allowing for/managing growth and protecting our agricultural activities.

Recommendations

1. Allow for smaller lot sizes, lot frontage and setbacks and for higher densities in the growth area to create conditions that allow the village to grow.
2. Allow for smaller lot sizes, but limit the residential density in the Rural Area.
3. Explore regulating driveway entrances instead of having a lot road frontage requirement.
4. Allow cluster housing.
5. Create a transfer of development rights program which would allow for greater development densities in the village.

6. Continue to allow for mixed use development throughout Town with buffering to different uses.
7. Minimize non-agricultural development on prime farmland soils.
8. Protect active agricultural activities from new development by requiring buffers & setbacks.
9. Encourage utilization and support the preservation of prime farmland.
10. Minimize the impact of development in and around high valued areas, such as wetlands, waterbodies and wildlife.
11. Continue to encourage the preservation of open space and the creation of greenspace.
12. Continue to encourage the preservation of access to land and water resources.
13. Continue to allow diverse housing types within the Towns ordinances including cluster and co-housing.
14. Support efforts to develop affordable, seasonal and workforce housing.
15. Support the development of housing opportunities for elderly and assisted living.
16. Implement the Walkable Village Plan.
17. Implement the Waterfront Plan.
18. Continue to coordinate and partner with other municipalities, Friends of Merrymeeting Bay, and other organizations to protect natural resources.
19. Continue to maintain and protect our critical natural resources through our Town, State and Federal regulations, including (but not limited to) Shoreland Zoning, Floodplain Management, Natural Resources Protection Act, Subdivision, Site Plan Review, Stormwater Management.
20. Maintain, enact or amend local ordinances as appropriate to:
 - a. Clearly define the desired scale, intensity, and location of future development.
 - b. Establish and maintain fair and efficient permitting procedures.
 - c. Explore streamlining permitting procedures in growth areas.
 - d. Clearly define protective measures for critical (and important) natural resources;
 - e. Clearly define protective measures for any proposed critical rural areas.
 - f. Ensure that the Town's Land Use Ordinance is consistent with applicable State laws and rules regarding critical natural resources.
 - g. Review and update Shoreland Zoning rules.
21. Assign responsibility for implementing the Future Land Use Plan to the appropriate committee(s), board(s) or municipal official(s).



Growth Area

"The village is ever more attractive and lively. There are more businesses, another restaurant or two, and sidewalks. New development in the village is in character with the historic buildings and served by enhanced infrastructure." - Vision Statement

This Growth Area will allow the Town's historical village area to be maintained and grow into the surrounding developed area: Main Street to the highway interchange area and Pond Road, "Little Brooklyn" (the waterfront area to Wallentine Road), the area around the Bowdoinham Community School, Fisher Road where smaller lots currently exist, and the existing subdivision area around Browns Point Road. To allow for new development in the growth area, the required lot size and residential density will need to be reduced from one acre and provisions for cluster subdivisions and multi-family developments should be considered. The existing lots in the historic village area are 10,000 to 20,000 square feet. Due to the Town's dependence on septic(s) and State's Subsurface Wastewater Disposal Rules the lot size and residential density could not be less than 20,000 square feet (a little less than half an acre). To keep in character with our historic village area, mixed-use development (residential, agricultural, commercial, institutional and industrial) should be allowed to continue. The Town's current Site Plan rules were created in 2008 to address mixed-use development through-out Town and should be adequate as mixed-use is allowed to continue. However, due to the Shoreland Zone and Floodplain areas within this growth area, some industrial and commercial uses will have to continue to be restricted. As the village area grows, the Town will need to continue with its capital investments (sidewalks, three phase power, other amenities, etc.) as planned.

Transitional Area

"The town's rural character, rich history, and natural beauty are preserved. Bowdoinham's country roads continue to be lined with scattered houses, fields, forests and small businesses." - Vision Statement

The Transitional Areas are the areas in Town which are located adjacent to more developed areas (Richmond's village, "four-corners" and highway-interchange areas; Topsham's Rural Residential District; and our growth area. While these areas may be appropriate for development, the Town wants to direct its growth and the capital investments to support growth into the growth area. These transitional areas should continue to allow mixed-use development (residential, agricultural, commercial, institutional and industrial) in accordance with the Town's Site Plan Review rules. Additional regulations will impact development in the transitional areas that are within the Shoreland Zone and Floodplain areas. The lot size and residential density of one-acre should remain for the transitional areas and provisions for cluster subdivision with open space should be considered.

Rural Area

"The town's rural character, rich history, and natural beauty are preserved. More of the land is in agricultural use and the food produced is healthy and safe. Woods, wetlands, and waterfronts are highly valued as in the past. Continuing a tradition of thoughtful management, Bowdoinham's wildlife habitat and outdoor recreation areas, including Merrymeeting Bay, are treasured by locals and visitors alike. Bowdoinham's country roads continue to be lined with scattered houses, fields, forests and small businesses." - Vision Statement

The Rural Area includes most of the Town's agricultural land, forests, natural resources (wetlands, wildlife habitats etc.), and preserved lands. The ability of the land to support new development varies through-out this Rural Area. Bowdoinham is known for both its poor soils (wet and clay) and good agricultural soils. The lot size and residential density should remain one-acre and provisions for cluster subdivision with open space should be considered. While home-based businesses, residential and agricultural uses should continue to be allowed, the Town should consider restricting commercial and industrial uses that would negatively impact the existing uses and important natural resources. Additionally, the Town should take steps to protect and maintain its agricultural activities and agricultural soils.

Critical Natural Resources

Our critical natural resources should continue to be maintained and protected through our Town, State and Federal regulations, including (but not limited to) Shoreland Zoning, Floodplain Management, Natural Resources Protection Act, Subdivision, Site Plan Review, Stormwater Management. Please refer to the following maps:

- Bowdoinham Habitat and Marines Resources
- Beginning with Habitat - High Value Plant & Animal Habitats
- Regionally Significant Habitats and Undeveloped Blocks
- Water Resources
- Bowdoinham Shoreland Zoning Map
- Bowdoinham Floodplain Map

Sea Level Rise & Climate Change

Goals

1. To recognize that sea level rise is occurring, causing higher water levels for the highest annual tide, and increasing the height of tidal surges during storms.
2. To recognize that overall precipitation is increasing, with more frequent and intense rain and snow events.
3. To implement strategies so the Town can become more resilient, minimize environmental and economic impacts, and bounce back quickly after damage from a flood occurs.
4. To implement strategies that reduce the negative impacts and capture the opportunities from climate change and sea level rise.

Key Issue

Acknowledging that sea-level rise is happening and planning for it.

Recommendations

1. Strengthen standards, beyond the minimum FEMA Flood Insurance Program requirements, for new or replacement construction in areas that flood, with potential premium savings to policy holders (see Figure 23, in Sea Level Rise & Climate Change Inventory & Analysis).
2. Inventory the Town roads, bridges, drains, and buildings or other properties that are at risk from flooding. Then when these items are being replaced, elevate roads and bridges, improve road subsurfaces, and increase culvert sizes, to make them more flood-proof.
3. Consider the benefits and costs of higher or more resilient designs, when making capital budget decisions.
4. Maintain a digital Shoreland Zoning Map, and locate the position of the highest annual tide level for Bowdoinham, so that the edges of the shoreland zone are accurate on the map, as sea level rise increases (see Figure 24, in Sea Level Rise & Climate Change Inventory & Analysis).
5. Participate in the FEMA National Flood Insurance Community Rating System (CRS) program, so flood insurance policy holders in Bowdoinham can get the best available flood insurance rates (see Figure 25, in Sea Level Rise & Climate Change Inventory & Analysis).
6. Consider natural ways to make shorelines more resistant to erosion, such as installing native plantings and creating berms, rather than putting in hard structures that may just shift the location of the erosion problem.
7. Encourage public or private purchases of uplands adjacent to tidal marshes, to allow marches to migrate, as sea level rises.
8. Participate in Regional or State studies of sea level rise and climate change impacts, as well as data collection efforts, as funding is available.
9. Encourage the reduction of the area of impervious surfaces in shoreland areas to improve drainage.

PLAN IMPLEMENTATION & EVALUATION

Implementation

Key –

Town Departments, Boards & Committees

SB – Select Board

CIC – Cable-Internet Committee

EC – Energy Committee

CPC – Comprehensive Planning Committee

PB – Planning Board

BOA – Board of Appeals

COA – Committee on Aging

CDAC – Community Development Advisory Committee

DCED – Department of Community & Economic Development

BWPG – Biking, Walking & Paddling Group

ACE – Active Community Environment Team

Strategies	Responsible Party	Timeline
<u>Economy</u>		
1. Support and promote eco-tourism, agri-tourism, historic tourism and the arts.	DCED & CDAC	Ongoing
2. Develop a brand and branding strategy then promote through multiple media types.	DCED & CDAC	0-2 years
3. Attract complimentary businesses into Town.	DCED & CDAC	Ongoing
a. Create and promote an economic brochure highlighting the benefits of doing business in Bowdoinham.	DCED & CDAC	0-2 years
4. Create and distribute a new business introductory package.	DCED & CDAC	2-5 years
5. Create and distribute a new resident package that includes a Bowdoinham business directory and Bowdoinham business coupons.	DCED & CDAC	2-5 years
6. Support the work and mission of the Community Development Advisory Committee.	SB	Ongoing

7. Support and promote existing businesses and community groups.	DCED & CDAC	Ongoing
8. Provide resources and education for starting and running a small business.	DCED & CDAC	Ongoing
9. Support and promote business workshops for Bowdoinham businesses.	DCED & CDAC	Ongoing
10. Plan for and utilize TIF funds to support our economic goals.	DCED & CDAC	Ongoing
11. Plan for and develop infrastructure to support business development in the village including a public wastewater system, public bathrooms, sidewalks, bike lanes and public parking.	DCED & CDAC	Ongoing
12. Plan for and develop communication, internet and energy infrastructure to support business development throughout Bowdoinham.	Planning Dept & CIC	Ongoing
13. Develop and implement a village beautification plan to make changes to the village such as lighting, landscaping, public greenspaces and other amenities to help attract new businesses and visitors alike.	DCED & CDAC	5-10 years
14. Develop signage for the village and businesses.	DCED & CDAC	0-2 years
15. Implement Waterfront Plan.	DCED & Planning Dept	Ongoing
16. Implement Walkable Village Plan.	DCED & Planning Dept	Ongoing
17. Support the development of and implement the Merrymeeting Trail.	DCED & Planning Dept	Ongoing
18. Participate in any regional economic development efforts.	DCED	Ongoing
<u>Agriculture</u>		
1. Recognize farmland based on current use and prime farmland soils, not just farmland enrolled in the Farmland Tax Program.	Planning Dept	0-2 years
2. Review the Farmland Taxation Program to ensure program is beneficial to farmers.	SB	0-2 years
3. Encourage owners of productive farm land to enroll in the Farmland Taxation Program.	Planning Dept	Ongoing
4. Adopt and encourage participation in the voluntary Municipal Farm Support Program.	SB	0-2 years

5. Amend the Land Use Ordinance to minimize non-agricultural development on prime farmland soils.	Planning Dept & PB/CPC	0-5 years
6. Create mechanisms to protect active agricultural activities from new development.	Planning Dept & PB/CPC	0-2 years
7. Consult with Department of Agriculture, Conservation and Forestry when developing any land use regulations pertaining to agricultural management practices to ensure regulations are agriculture friendly.	Planning Dept & PB/CPC	Ongoing
8. Encourage and support agricultural businesses and productive agriculture operations.	DCED	Ongoing
9. Promote and support agri-tourism.	DCED & CDAC	Ongoing
10. Promote the benefits of agriculture.	DCED & CDAC	Ongoing
11. Explore the interest in and benefit of creating and marketing a Bowdoinham brand for agricultural products.	DCED & CDAC	2-5 years
12. Support the development of new markets for Bowdoinham agricultural products.	DCED & CDAC	Ongoing
13. Encourage and support getting local food to children, elderly and low income people, including but not limited to, distribution through the schools, a local food pantry, and education in the preparation and benefits of eating healthy local foods.	DCED & Planning Dept	Ongoing
14. Support the Bowdoinham Farmers' Market and other local venues to enhance opportunities to obtain local foods.	DCED & Planning Dept	Ongoing
15. Support the growth of an organic farm cluster to enhance our regional agricultural opportunities.	DCED & Planning Dept	Ongoing
16. Encourage, support and participate in regional agricultural projects that support the growth of agriculture in Bowdoinham.	DCED & Planning Dept	Ongoing
17. Encourage Maine Department of Inland Fisheries & Wildlife and other landowners with prime farmland soils to lease the land for agricultural uses.	DCED & Planning Dept	Ongoing
18. Encourage and support the preservation of prime farmland.	DCED & Planning Dept	Ongoing

19. Ensure that all farmers and those living on prime agricultural soils or historical farm properties are aware of all options for protection and maintaining their farms as productive farms.	DCED & Planning Dept	2-5 years
20. Encourage and support the creation of a gleaning group.	DCED & Planning Dept	5-10 years
21. Encourage the formation of a farmers' alliance/group or Local Food Council and support their work.	DCED & Planning Dept	2-5 years
22. Support agricultural educational opportunities.	DCED & Planning Dept	Ongoing
23. Create farmer resource package for the website and distribution to farmers.	DCED & Planning Dept	0-2 years
<u>Forest Resources</u>		
1. Provide for and support forest management, resources, educational opportunities and good stewardship.	Planning Dept	Ongoing
2. Create a resource package that includes various options for forest management, such as types of timber harvesting, wildlife habitat enhancement possibilities and recreational opportunities for the website and distribution to wood lot owners.	Planning Dept	2-5 years
<u>Natural Resources</u>		
1. Explore creating a Conservation Commission to serve the Town and our resources.	SB	2-5 years
2. Promote good stewardship, support and provide educational opportunities and resources.	Planning Dept	Ongoing
a. Develop brochures about our natural resources.	Planning Dept	Ongoing
b. Create educational signage for important natural resource areas.	Planning Dept	2-5 years
3. Coordinate and partner with other municipalities, Friends of Merrymeeting Bay, and other organizations to protect natural resources.	Planning Dept	Ongoing

4. Ensure that the Town's Land Use Ordinance is consistent with applicable State laws and rules regarding critical natural resources.	Planning Dept & PB/CPC	Ongoing
<u>Water Resources</u>		
1. Promote good stewardship of our water resources.	Planning Dept	Ongoing
2. Provide for and support educational opportunities and resources.	Planning Dept	Ongoing
a. Provide shoreland zoning workshops and materials for property owners.	Planning Dept	Ongoing
b. Support and provide educational opportunities and resources to reduce water pollution.	Planning Dept	Ongoing
3. Protect current and potential water sources.	Planning Dept & PB/CPC	Ongoing
4. Cooperate with other municipalities, Bowdoinham Water District, Friends of Merrymeeting Bay, and other organizations to protect water resources.	Planning Dept	Ongoing
5. Ensure the Town's Land Use Ordinance to be consistent with Maine Stormwater Management law and rules.	Planning Dept & PB/CPC	Ongoing
6. Amend the Town's Land Use Ordinance to incorporate low impact development standards.	Planning Dept & PB/CPC	0-2 years
<u>Historic & Archaeological Resources</u>		
1. Provide for and support educational opportunities and resources.	Planning Dept	Ongoing
2. Promote the maintenance and restoration of historic buildings.	Planning Dept	Ongoing
3. Support the activities and mission of the Bowdoinham Historical Society.	SB	Ongoing
4. Survey and inventory our resources.	Planning Dept	5-10 years
a. Support the preservation of these resources.	SB	Ongoing
5. Create a cemetery map.	Planning Dept	2-5 years
6. Host an annual Cemetery Clean-up Day.	DCED & Planning Dept	Ongoing

7. Maintain provisions in the Town's Land Use Ordinance to protect the significant historic and archaeological resources in the community to the greatest extent practicable.	Planning Dept & PB/CPC	Ongoing
<u>Recreation</u>		
1. Support the Town's Biking, Walking, and Paddling Group:	SB	Ongoing
a. Promote biking, walking and paddling in Bowdoinham.	BWPG/ACE	Ongoing
b. Develop opportunities and access for biking, walking and paddling.	BWPG/ACE	Ongoing
c. Host an annual race.	BWPG/ACE	Ongoing
d. Develop a trail plan.	BWPG/ACE	0-2 years
e. Work to develop the Merrymeeting Trail	BWPG/ACE	Ongoing
f. Work with clubs to sponsor bike tours in and through Bowdoinham.	BWPG/ACE	Ongoing
2. Promote recreational opportunities in Bowdoinham.	DCED & BWPG/ACE	Ongoing
3. Identify and promote opportunities on publicly owned lands.	DCED & BWPG/ACE	Ongoing
4. Support the Bowdoinham Snowbirds.	SB	Ongoing
5. Investigate and develop a safe location for swimming.	Planning & Recreation Departments	2-5 years
6. Encourage landowners to allow access for hunting, fishing, snowmobiling and trails.	Planning & Recreation Departments	Ongoing
7. Support the creation of the Merrymeeting Trail.	DCED & Planning Dept	Ongoing
8. Maintain an inventory of our recreational resources.	Planning & Recreation Departments	0-2 years
9. Investigate the feasibility of, and opportunities to develop a community center.	Planning & Recreation Departments	0-5 years
10. Develop, support & promote indoor recreation opportunities.	Recreation Dept	Ongoing
11. Develop adult sports leagues.	Recreation Dept	Ongoing
12. Host board and card game events.	Recreation Dept & COA	Ongoing

13. Develop and promote boating opportunities.	Recreation Dept & BWPG/ACE	Ongoing
14. Investigate and develop a sledding hill.	Recreation Dept	0-5 years
15. Maintain and upgrade recreational facilities as needed.	Recreation Dept	Ongoing
16. Develop additional safe access points to Merrymeeting Bay and the rivers.	Recreation Dept	Ongoing
17. Support the development of a skatepark.	Recreation Dept	0-2 years
18. Support our Committee on Aging in creating recreational activities for our seniors.	SB	Ongoing
19. Explore and create (if possible) a new committee, possibly an Active Community Environment Team to implement our strategies for recreation.	SB	0-2 years
<u>Housing</u>		
1. Promote energy efficient housing.	EC	Ongoing
2. Allow diverse housing types within the Town's ordinances including cluster and co-housing.	Planning Dept & PB/CPC	Ongoing
3. Support efforts to develop affordable, seasonal and workforce housing.	Planning Dept	Ongoing
4. Support the development of housing opportunities for the elderly and disabled, including assisted living.	Planning Dept & COA	Ongoing
5. Support efforts to help the elderly and disabled remain in their homes.	COA	Ongoing
<u>Transportation</u>		
1. Develop additional parking in the village.	DCED & Planning Dept	5-10 years
2. Encourage Maine Department of Transportation to develop additional parking at the Park and Ride.	Town Manager & SB	Ongoing
3. Encourage Maine Department of Transportation to reconstruct Route 24 and its intersections with Ridge Road, White Road and Carding Machine Road.	Town Manager & SB	Ongoing
4. Encourage Maine Department of Transportation to create bike lanes on Route 24.	Town Manager & SB	Ongoing

5. Encourage Maine Department of Transportation to create sidewalks on Routes 24, 125 and 138 in the village area.	Town Manager & SB	Ongoing
6. Develop bike paths and bike lanes on Town roads.	Town Manager & SB	Ongoing
7. Support the development of the Merrymeeting Trail.	DCED & Planning Dept	Ongoing
8. Develop sidewalks throughout the village as approved in Walkable Village Plan.	DCED & Planning Dept	Ongoing
9. Implement and update the Town's Transportation Vision Statement.	Town Manager & SB	Ongoing
10. Promote, encourage and support public transportation opportunities.	DCED & Planning Dept	Ongoing
11. Promote, encourage and support alternative transportation.	BWPG/ACE	Ongoing
12. Encourage train service in Bowdoinham.	DCED & Planning Dept	Ongoing
13. Promote, encourage and support ride sharing.		Ongoing
14. Maintain the Road Maintenance Plan.	Town Manager	Ongoing
15. Participate in regional and state transportation efforts.	Planning Dept	Ongoing
16. Develop transportation opportunities to serve the elderly, as needed.	COA	0-2 years
17. When contemplating infrastructure improvements, consider the effects of sea level rise to ensure more resilient systems.	Town Manager & SB	Ongoing
<u>Public Facilities and Services</u>		
1. Develop internet infrastructure to serve all Bowdoinham residents.	CIC	Ongoing
2. Develop additional public access internet service.	CIC	Ongoing
3. Encourage the extension of cable service to all Bowdoinham residents.	CIC	Ongoing
4. Encourage the State to allow greater competition between cable companies.	CIC	Ongoing
5. Investigate wastewater disposal options to serve the village area.	DCED & Planning Dept	5-10 years
6. Develop public bathrooms and pump facilities at Maily Waterfront Park.	DCED & Planning Dept	0-5 years

7. Investigate the development of natural gas infrastructure.	EC	Ongoing
8. Support the mission and work of all Town Committees.	SB	Ongoing
9. Encourage residents to join the Fire and EMS Departments.	Town Manager & SB	Ongoing
10. Encourage residents to improve access to and identification of their homes for emergency services.	Fire Dept	Ongoing
11. Promote, support and encourage recycling.	Recycling Dept	Ongoing
12. Ensure that Town Boards receive proper training to perform their duties.	Town Manager	Ongoing
13. Coordinate with other municipalities to enhance services.	Town Manager	Ongoing
14. Develop resident & new resident packages to inform residents of recreation opportunities, local businesses, Town services and other resources.	DCED & Planning Dept	0-5 years
15. Provide public facilities and services in a manner that promotes and supports growth and development in identified growth areas.	Town Manager & SB	Ongoing
16. Develop a financial model of how development impacts public services.	Town Manager & SB	5-10 years
<u>Fiscal Capacity and Capital Investment Plan</u>		
1. Maintain healthy fund balance.	Town Manager & SB	Ongoing
2. Anticipate further reductions in state support.	Town Manager & SB	Ongoing
3. Plan and save for capital projects.	Town Manager & SB	Ongoing
4. Maintain the investment and purchasing plan.	Town Manager & SB	Ongoing
5. Explore opportunities to work with other municipalities to plan for and finance shared or adjacent capital investments to increase cost savings and efficiencies.	Town Manager & SB	Ongoing
6. Explore grant opportunities to assist in the funding of capital investments.	Town Manager & SB	Ongoing

<u>Land Use</u>		
1. Allow for smaller lot sizes, lot frontage and setbacks and for higher densities in the growth area to create conditions that allow the village to grow.	Planning Dept & PB/CPC	0-2 years
2. Allow for smaller lot sizes, but limit the residential density in the Rural Area.	Planning Dept & PB/CPC	0-2 years
3. Explore regulating driveway entrances instead of having a lot road frontage requirement.	Planning Dept & PB/CPC	5-10 years
4. Allow cluster housing.	Planning Dept & PB/CPC	0-2 years
5. Create a transfer of development rights program which would allow for greater development densities in the village.	Planning Dept & PB/CPC	2-5 years
6. Continue to allow for mixed use development throughout Town with buffering to different uses.	Planning Dept & PB/CPC	Ongoing
7. Minimize non-agricultural development on prime farmland soils.	Planning Dept & PB/CPC	0-2 years
8. Protect active agricultural activities from new development by requiring buffers & setbacks.	Planning Dept & PB/CPC	0-2 years
9. Encourage utilization and support the preservation of prime farmland.	Planning Dept & PB/CPC	Ongoing
10. Minimize the impact of development in and around high valued areas, such as wetlands, waterbodies and wildlife.	Planning Dept & PB/CPC	Ongoing
11. Continue to encourage the preservation of open space and the creation of greenspace.	Planning Dept & PB/CPC	Ongoing
12. Continue to encourage the preservation of access to land and water resources.	Planning Dept & PB/CPC	Ongoing
13. Continue to allow diverse housing types within the Towns ordinances including cluster and co-housing.	Planning Dept & PB/CPC	Ongoing
14. Support efforts to develop affordable, seasonal and workforce housing.	DCED & Planning Dept	Ongoing
15. Support the development of housing opportunities for elderly and assisted living.	Planning Dept & PB/CPC	Ongoing
16. Implement the Walkable Village Plan.	DCED & Planning Dept	Ongoing

17. Implement the Waterfront Plan.	DCED & Planning Dept	Ongoing
18. Continue to coordinate and partner with other municipalities, Friends of Merrymeeting Bay, and other organizations to protect natural resources.	DCED & Planning Dept	Ongoing
19. Maintain, enact or amend local ordinances as appropriate to:		
a. Clearly define the desired scale, intensity, and location of future development.	Planning Dept & PB/CPC	Ongoing
b. Establish and maintain fair and efficient permitting procedures.	Planning Dept & PB/CPC	Ongoing
c. Explore streamlining permitting procedures in growth areas.	Planning Dept & PB/CPC	Ongoing
d. Clearly define protective measures for critical (and important) natural resources;	Planning Dept & PB/CPC	Ongoing
e. Clearly define protective measures for any proposed critical rural areas.	Planning Dept & PB/CPC	Ongoing
f. Ensure that the Town's Land Use Ordinance is consistent with applicable State laws and rules regarding critical natural resources.	Planning Dept & PB/CPC	Ongoing
g. Review and update Shoreland Zoning rules.	Planning Dept & PB/CPC	Ongoing
20. Assign responsibility for implementing the Future Land Use Plan to the appropriate committee(s), board(s) or municipal official(s).	SB	Ongoing
<u>Sea Level Rise & Climate Change</u>		
1. Strengthen standards, beyond the minimum FEMA Flood Insurance Program requirements, for new or replacement construction in areas that flood, with potential premium savings to policy holders (see Figure 23, in Sea Level Rise & Climate Change Inventory & Analysis).	PB	0-2 years
2. Inventory the Town roads, bridges, drains, and buildings or other properties that are at risk from flooding. Then when these items are being replaced, elevate roads and bridges, improve road subsurfaces, and increase culvert sizes, to make them more flood-proof.	Town Manager & SB	Ongoing

3. Consider the benefits and costs of higher or more resilient designs, when making capital budget decisions.	Town Manager & SB	Ongoing
4. Maintain a digital Shoreland Zoning Map, and locate the position of the highest annual tide level for Bowdoinham, so that the edges of the shoreland zone are accurate on the map, as sea level rise increases (see Figure 24, in Sea Level Rise & Climate Change Inventory & Analysis).	Planning Dept & PB	Ongoing
5. Participate in the FEMA National Flood Insurance Community Rating System (CRS) program, so flood insurance policy holders in Bowdoinham can get the best available flood insurance rates (see Figure 25, in Sea Level Rise & Climate Change Inventory & Analysis).	Town Manager & SB	Ongoing
6. Consider natural ways to make shorelines more resistant to erosion, such as installing native plantings and creating berms, rather than putting in hard structures that may just shift the location of the erosion problem.	Planning Dept & PB	Ongoing
7. Encourage public or private purchases of uplands adjacent to tidal marshes, to allow marches to migrate, as sea level rises.	Planning Dept & PB	Ongoing
8. Participate in Regional or State studies of sea level rise and climate change impacts, as well as data collection efforts, as funding is available.	Planning Dept & PB	Ongoing
9. Encourage the reduction of the area of impervious surfaces in shoreland areas to improve drainage.	Planning Dept & PB	Ongoing

Evaluation

All Responsible Parties should report annually, in the month of January, to the Select Board on their process with their respective strategies over the last year. Their reports should include:

- Their progress on their respective strategies.
- Barriers to accomplishing their respective strategies.
- Their proposed next steps for the next twelve months.
- Any proposed updates to Comprehensive Plan.

INVENTORY & ANALYSIS

Population & Demographics

Conditions & Trend

(1) *The community’s Comprehensive Planning Population and Demographic Data Set (including relevant local, regional, and statewide data) prepared and provided to the community by the Office or its designee.*

The Town’s growth since 1970 has been 2.4 times the growth of Sagadahoc County and 3.6 times that of the State.

Population Changes from 1970 to 2010			
Year	Bowdoinham	Sagadahoc County	Maine
1970	1,294	23,452	993,722
1980	1,828	28,795	1,125,043
1990	2,192	33,535	1,227,928
2000	2,612	35,214	1,274,923
2010	2,889	35,293	1,328,361
Change	1,595	11,841	334,639
Percent Change	123.3%	50.5%	33.7%

Source: Census

Bowdoinham has continued to grow since the 1970s but at a slower rate each successive decade. The County and State have grown at a slower rate than has the Town in each of the last four decades.

Percent Population Changes By Decade			
Decade	Bowdoinham	Sagadahoc County	Maine
1970 - 1980	41.3%	22.8%	13.2%
1980 - 1990	19.9%	16.5%	9.1%
1990 - 2000	19.2%	5.0%	3.8%
2000 - 2010	10.6%	0.2%	4.2%

Source: Census

The State predicts that Bowdoinham’s population will decline modestly over the next twenty years, while Sagadahoc County’s population decline will be more noticeable. The Town, however, predicts that its population will continue to increase in line with the trends observed. For planning purposes, the 2024 population of the Town is forecast to total a maximum of 3,300 persons.

SPO Population Projections 2013 to 2023				
Area/Year	2013	2018	2023	Percent Change
Bowdoinham	2,756	2,739	2,704	-1.9%
Sagadahoc County	35,740	34,964	33,985	-4.9%

Source: Maine SPO

Note: Based upon 1990-2008 data.

From 2000 to 2010, the Town's population increased by 277 persons. Of that growth, 161 was due to natural increase (births minus deaths). The remainder, 116, was due to the in-migration of new residents.

Vital Statistics for Bowdoinham												
Vitals/Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Deaths	14	11	18	9	16	15	16	25	27	16	12	179
Births	29	34	35	37	33	31	28	34	21	26	32	340

Sources: Maine Office of Data, Research, and Vital Statistics: 2000-2005, Bowdoinham Annual Town Reports 2006-2010. Town figures are shown in the table for those years.

In 2010, females comprised 49.9% of Bowdoinham's population, while males comprised 50.1%. For Sagadahoc County, females comprised 51.6%, while males comprised 48.4%. Statewide, females comprised 51.1%, while males comprised 48.9%.

The median age of Bowdoinham residents has increased almost ten years over the past three decades. In 2010, the Town median was slightly lower than the County median but higher than the State median.

Median Age				
Area	1990	2000	2010	Percent Change
Bowdoinham	33.9	39.1	43.7	28.9%
Sagadahoc County	32.6	38.0	44.1	35.3%
Maine	33.9	38.6	42.7	26.0%

Source: Census

In the last decade, Bowdoinham lost population in these age groups: 5-17, 20-21, 30-44, and 80+. The Town gained population in all the other groups, most noticeably for those aged 45-79, and to a lesser extent, those aged 22-29. This suggests that Bowdoinham's residents are aging and some youth are coming home after college. This also suggests that the Town has become more attractive to those in or nearing retirement age than it is to families with children.

Age Groups in Bowdoinham				
Population	2000	2010	Change	Percent Change
Under 5 years	141	145	4	2.8%
5 to 9 years	179	174	-5	-2.8%
10 to 14 years	221	182	-39	-17.6%

Age Groups in Bowdoinham				
Population	2000	2010	Change	Percent Change
15 to 17 years	134	122	-12	-9.0%
18 and 19 years	54	59	5	9.3%
20 years	15	13	-2	-13.3%
21 years	19	15	-4	-21.1%
22 to 24 years	65	86	21	32.3%
25 to 29 years	121	150	29	24.0%
30 to 34 years	162	149	-13	-8.0%
35 to 39 years	240	173	-67	-27.9%
40 to 44 years	264	238	-26	-9.8%
45 to 49 years	252	285	33	13.1%
50 to 54 years	217	283	66	30.4%
55 to 59 years	172	241	69	40.1%
60 and 61 years	36	84	48	133.3%
62 to 64 years	56	124	68	121.4%
65 to 69 years	81	159	78	96.3%
70 to 74 years	55	91	36	65.5%
75 to 79 years	58	64	6	10.3%
80 to 84 years	35	23	-12	-34.3%
85 years and over	35	29	-6	-17.1%
Total	2,612	2,889	277	10.6%

Source: Census

Sagadahoc County has seen declines in these age groups: 0-19, 21 and 25-44. These age groups increased countywide: 20, 22-24, 45-85+.

Age Groups in Sagadahoc County				
Population	2000	2010	Change	Percent Change
Under 5 years	2,153	1,912	-241	-11.2%
5 to 9 years	2,523	2,033	-490	-19.4%
10 to 14 years	2,814	2,114	-700	-24.9%
15 to 17 years	1,584	1,363	-221	-14.0%
18 and 19 years	774	685	-89	-11.5%
20 years	261	301	40	15.3%
21 years	312	272	-40	-12.8%
22 to 24 years	961	1,033	72	7.5%
25 to 29 years	2,026	1,822	-204	-10.1%
30 to 34 years	2,451	1,804	-647	-26.4%
35 to 39 years	3,063	2,216	-847	-27.7%
40 to 44 years	3,190	2,501	-689	-21.6%
45 to 49 years	2,905	3,042	137	4.7%
50 to 54 years	2,498	3,107	609	24.4%
55 to 59 years	1,933	2,852	919	47.5%
60 and 61 years	585	1,029	444	75.9%

Age Groups in Sagadahoc County				
Population	2000	2010	Change	Percent Change
62 to 64 years	847	1,419	572	67.5%
65 to 69 years	1,246	1,973	727	58.3%
70 to 74 years	1,015	1,368	353	34.8%
75 to 79 years	868	984	116	13.4%
80 to 84 years	606	683	77	12.7%
85 years and over	599	780	181	30.2%
Total	35,214	35,293	79	0.2%

Source: Census

The State projects that Sagadahoc County's population will decline over the next twenty years for these age groups: 0-59. Population growth for those 60+ years in age will not offset the total forecasted population loss countywide.

SPO Population Projections for Sagadahoc County				
Age/Year	2013	2018	2023	Percent Change
0-4	1,981	1,852	1,701	-14.1%
5-9	2,106	1,979	1,850	-12.2%
10-14	2,146	2,099	1,972	-8.1%
15-19	1,976	1,832	1,807	-8.6%
20-24	1,756	1,374	1,357	-22.7%
25-29	1,809	1,758	1,376	-23.9%
30-34	1,991	1,899	1,846	-7.3%
35-39	1,933	1,962	1,871	-3.2%
40-44	2,508	1,932	1,959	-21.9%
45-49	2,741	2,530	1,955	-28.7%
50-54	3,261	2,666	2,463	-24.5%
55-59	2,996	3,194	2,614	-12.8%
60-64	2,602	2,907	3,100	19.1%
65-69	2,130	2,429	2,714	27.4%
70-74	1,421	1,914	2,179	53.3%
75-79	1,017	1,169	1,583	55.7%
80-84	695	787	907	30.5%
85+	671	681	731	8.9%
Total	35,740	34,964	33,985	-4.9%

Source: Maine SPO

Note: Based upon 1990-2008 data.

The average household size has decreased in Bowdoinham, Sagadahoc County and statewide. This trend is due to several factors: a lower proportion of married couples, fewer children per family, and more people living alone. The Town's relatively larger average household size than that of the County or State suggests the presence of proportionally more families in Bowdoinham. Given the lack of rental housing in Town, it is not surprising that single persons

would be drawn to larger service center communities. See the Housing Chapter for more information.

Persons Per Household/Average Household Size			
Year	Bowdoinham	Sagadahoc County	Maine
1970	3.37	3.12	3.16
1980	2.92	2.80	2.75
1990	2.68	2.63	2.56
2000	2.54	2.47	2.39
2010	2.45	2.32	2.32
Percent Change	-27.3%	-25.6%	-26.6%

Source: Census

Bowdoinham has proportionally more educated residents on average than does Sagadahoc County or the State. The last decade has seen a significant increase in the percentage of Town residents with a college degree. See the Public Facilities Chapter for current enrollment figures in area schools.

Educational Attainment				
Category	Year	Bowdoinham	Sagadahoc County	Maine
High School Graduate or Higher	2000	90.53%	87.97%	85.37%
	2010	94.5%	91.8%	89.8%
Bachelor's Degree or Higher	2000	28.63%	24.99%	22.87%
	2010	36.5%	29.6%	26.5%

Source: Census

Analysis

- (1) *Is the rate of population change expected to continue as in the past, or to slow down or speed up? What are the implications of this change?*

Over the past forty years, the population of Bowdoinham has increased from 1,294 persons in 1970 to 2,889 persons in 2010. (For earlier figures, see the History Chapter.) The rate of population increase has slowed. The State predicts modest population declines for the Town over the next twenty years based upon 1990-2008 data. Given the results of the most recent Census and the observed growth trends (since 1970 and since 2000), however, the Town believes that its population will continue to increase modestly. For planning purposes, the 2024 population of the Town is forecast to total a maximum of 3,300 persons. With more residents, the demand for the range of existing municipal services, and for expanded services, like those found in larger communities, is likely to increase, putting pressure on already tight budgets. See the Fiscal Capacity Chapter for more information.

- (2) *What will be the likely demand for housing and municipal and school services to accommodate the change in population and demographics, both as a result of overall change and as a result of change among different age groups?*

Increasing population along with declining average household size, as seen locally over the past forty years, suggests that the demand for new housing will outpace the overall forecasted growth in population. Much of the growth seen in the Town's population has been in the older age groups. School enrollments have declined over the past decade. School statistics of future enrollments are not available. For planning purposes, enrollments are predicted to remain stable or decline modestly. Expanded school facilities will not be needed. However, the renovation or replacement of aging facilities will be of concern. See the Public Facilities Chapter for more information.

The demand for services to meet elderly needs like assisted living is expected to increase. To balance these demographic trends, the Town could seek to attract younger families with children through the provision of more affordable housing options and the promotion of local employment opportunities. See the Housing Chapter and Economy Chapter for details.

- (3) *Does your community have a significant seasonal population, is the nature of that population changing? What is the community's dependence on seasonal visitors?*

In 2010, the Census recorded 42 seasonal housing units in Bowdoinham. The national average household size was 2.58 persons in 2010. Accordingly, on average there are about 109 people in seasonal housing units in Town. Bowdoinham has no licensed transient accommodations (hotels, motels, or inns). Given the small number of seasonal visitors, the Town is not dependent on this group economically, but would like to grow it.

- (4) *If your community is a service center or has a major employer, are additional efforts required to serve a daytime population that is larger than its resident population?*

Bowdoinham is not a service center community. Bath, with a 2010 population of 8,514, is the principal service center in Sagadahoc County. Brunswick, with a population of 20,278, in neighboring Cumberland County is the closest service center to Bowdoinham.

Bowdoinham does not have a single major employer. The Town does not draw a daytime population that is significantly larger than its resident population. See the Economy Chapter for more information.

Economy

Conditions & Trends

(1) *The community's Comprehensive Planning Economic Data Set prepared and provided to the community by the Office or its designee.*

Over the past decade, the Town's labor force has had just a small increase of 48 persons. The unemployment rate went from 1.7% in 2000 to 6.8% in 2010 reflecting the downturn in the regional, State and national economy. In 2010, 106 persons in Bowdoinham's labor force were unemployed and looking for work. This was 80 more people than in 2000.

Bowdoinham Labor Force				
Year	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
2000	1,509	1,483	26	1.7%
2001	1,486	1,459	27	1.8%
2002	1,469	1,438	31	2.1%
2003	1,464	1,434	30	2.0%
2004	1,517	1,468	49	3.2%
2005	1,523	1,456	67	4.4%
2006	1,535	1,476	59	3.8%
2007	1,563	1,502	61	3.9%
2008	1,582	1,510	72	4.6%
2009	1,547	1,444	103	6.7%
2010	1,557	1,451	106	6.8%
Change	48	-32	80	5.1

Source: Maine Department of Labor

Note: Annual Not Seasonally Adjusted Labor Force

Over the past decade, Sagadahoc County's labor force has remained stable, with a decrease of 40 persons. The unemployment rate went from 2.6% in 2000 to 6.8% in 2010. At the end of the decade, the Town and County had the same unemployment rate. In 2010, 1,281 persons in the Sagadahoc County labor force were unemployed and looking for work. This was 791 more people than in 2000.

Sagadahoc County Labor Force				
Year	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
2000	18,795	18,305	490	2.6%
2001	18,500	17,932	568	3.1%
2002	18,206	17,566	640	3.5%
2003	18,312	17,595	717	3.9%

Sagadahoc County Labor Force				
Year	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
2004	18,509	17,827	682	3.7%
2005	18,460	17,656	804	4.4%
2006	18,721	17,965	756	4.0%
2007	18,959	18,222	737	3.9%
2008	19,208	18,323	885	4.6%
2009	18,741	17,388	1,353	7.2%
2010	18,755	17,474	1,281	6.8%
Change	-40	-831	791	4.2

Source: Maine Department of Labor

Note: Annual Not Seasonally Adjusted Labor Force

The Brunswick Labor Market Area (more recently designated as a Micropolitan Area) is almost twice the size of the labor force of Sagadahoc County. During the past decade, the labor market area has changed little, with a decrease of 51 persons. The unemployment rate went from 2.7% in 2000 to 6.9% in 2010. In 2010, 2,381 persons in the labor market area labor force were unemployed and looking for work. This was 1,442 more people than in 2000.

Brunswick Labor Market Area / Micropolitan Statistical Area Labor Force				
Year	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
2000	34,704	33,765	939	2.7%
2001	33,993	32,950	1,043	3.1%
2002	33,417	32,218	1,199	3.6%
2003	33,365	32,041	1,324	4.0%
2004	33,865	32,619	1,246	3.7%
2005	33,784	32,322	1,462	4.3%
2006	34,371	32,992	1,379	4.0%
2007	34,904	33,552	1,352	3.9%
2008	35,327	33,739	1,588	4.5%
2009	34,575	32,115	2,460	7.1%
2010	34,653	32,272	2,381	6.9%
Change	-51	-1,493	1,442	4.2

Source: Maine Department of Labor

Note: Annual Not Seasonally Adjusted Labor Force. The Brunswick LMA/Micropolitan Area includes Brunswick, Harpswell, Dresden, Westport, Wiscasset, Arrowsic, Bath, Bowdoin, Bowdoinham, Georgetown, Perkins UT, Phippsburg, Richmond, Topsham, West Bath, and Woolwich.

The State labor force grew by 24,811 persons from 2000 to 2010, while those unemployed and looking for work increased by 33,218 persons. The State unemployment rate rose to 7.9% in

2010, which was higher than the unemployment rate in Bowdoinham, Sagadahoc County, and the Brunswick Labor Market Area.

Maine Labor Force				
Year	Civilian Labor Force	Employment	Unemployment	Unemployment Rate (%)
2000	672,440	650,385	22,055	3.3
2010	697,251	641,978	55,273	7.9
Change	24,811	-8,407	33,218	5

Source: Maine Department of Labor

Note: Annual Not Seasonally Adjusted Labor Force

Fourteen new businesses located in Bowdoinham from 2005 to 2010, totaling 57 establishments. However, Bowdoinham businesses employed 59 fewer people at the end of this five-year period. Reported average wages in Bowdoinham workplaces have stagnated, increasing by only \$7 from 2005 to 2010.

Bowdoinham Employment and Wages			
Year	Average # of Establishments	Average Employment	Average Weekly Wage
2005	43	256	\$550
2010	57	197	\$557
Change	14	-59	\$7

Source: Maine Department of Labor, Center for Workforce Research and Information

Average wages for those who worked in the County and State were higher than for those who worked in the Town in 2005 and 2010. The increase in wages county- and state-wide was significantly greater than the increase in Bowdoinham.

State and County Employment and Wages		
Year	Sagadahoc County Average Weekly Wage	Maine Average Weekly Wage
2005	\$690	\$629
2010	\$837	\$718
Change	\$147	\$89

Source: Maine Department of Labor, Center for Workforce Research and Information

Despite significantly lower wages in Bowdoinham workplaces than in the County or State overall, the per capita income and mean household income are higher for Town residents than they are for residents of the County or State as a whole. Bowdoinham's higher income earners work for themselves, work outside of the Town, or have retirement income.

Income Estimates 2010			
Category	Bowdoinham	Sagadahoc County	Maine
Per capita income	\$27,827	\$26,983	\$25,385
Mean Household Income	\$68,447	\$63,168	\$60,036

Source: Census, American Community Survey

At 6.37%, Bowdoinham's household poverty rate was half that of the State's in 2009. Sagadahoc County's household poverty rate is between the Town and State levels.

Households and Poverty in 2009			
Category	Bowdoinham	Sagadahoc County	Maine
Total Households	1,067	14,470	542,617
Households Below Poverty	68	1,421	69,374
% Households Below Poverty	6.37%	9.82%	12.79%

Source: Census, American Community Survey

The poverty level in 2009 was \$17,098 for a three-person family. See the next table for poverty levels by family size.

U.S. Poverty Level by Family Size	
Category	2009
One person (unrelated individual)	\$10,956
Under 65 years old	\$11,161
65 years old and over	\$10,289
Two persons	\$13,991
Householder under 65 years old	\$14,366
Householder 65 years old and over	\$12,968
Three persons	\$17,098
Four persons	\$21,954
Five persons	\$25,991
Six persons	\$29,405
Seven persons	\$33,372
Eight persons	\$37,252
Nine or more persons	\$44,366

Source: Census

The two largest occupational sectors in Bowdoinham were 'management, professional and related occupations' and 'sales and office occupations'. These were the top sectors at the County and State level as well.

Employment by Occupation in 2009			
Sector	Bowdoinham	Sagadahoc County	Maine
Management, professional, and related occupations	698	6,551	224,966
Service occupations	187	2,898	115,271
Sales and office occupations	395	4,757	160,970
Farming, fishing, and forestry occupations	33	261	10,367
Construction, extraction, and maintenance occupations	144	2,136	66,058
Production, transportation, and material moving occupations	170	1,988	79,924
Total	1,610	18,418	657,556

Source: Census, American Community Survey

Total taxable retail sales declined in Bowdoinham from 2006 to 2010 by almost 25%. The only sector that saw growth locally was auto transportation: motor vehicle related businesses. Due to the small numbers of businesses in Town, some sectors have non-disclosable data and so are combined into a remainder figure in the next table.

Taxable Retail Sales in Bowdoinham (in Thousands of Dollars)						
Categories	2006	2007	2008	2009	2010	Change
Business Operating	612.4	391.7	564.4	290.9	325.9	-46.8%
Auto Trans	342.7	652.9	320.3	387.1	705.7	105.9%
Remainder	3914.6	4367.8	4102.2	3005	2632	-32.8%
Total	4869.7	5412.4	4986.9	3683	3663.6	-24.8%

Source: Maine Revenue Services

Notes: To use these figures, multiply by \$1,000. For confidentiality, categories with few businesses have been combined into the remainder figures.

Sagadahoc County recorded an increase of 9.8% in total taxable retail sales from 2006 to 2010. Growth was most pronounced in the general merchandise category. Many of Maine's counties saw a decline during this period, reflecting the generally poor State and national economies.

Taxable Retail Sales in Sagadahoc County (in Thousands of Dollars)						
Categories	2006	2007	2008	2009	2010	Change
Business Operating	14935.6	15138.7	14916.6	12938.1	14425.6	-3.4%
Building Supply	47656	47974.3	45355	39006.7	40007.4	-16.0%
Food Stores	33587.2	35981.9	37054	38260	39046.4	16.3%
General Merchandise	35778.9	51478.4	56009.5	54525.6	54820.9	53.2%
Other Retail	21845.2	26834.4	28763.3	29168.1	28347.8	29.8%
Auto Transportation	66274.4	66304.3	62841.2	62613	66377.7	0.2%
Restaurant	39350.4	41474.9	41563.8	41401	42342.2	7.6%
Lodging	8221.2	8656	7899.4	7395	8546.1	4.0%
Total	267648.9	293842.9	294402.8	285307.5	293914.1	9.8%

Source: Maine Revenue Services

Notes: To use these figures, multiply by \$1,000.

Maine Revenue Services category descriptions:

- **Total Retail Sales:** Includes Consumer Retail Sales plus special types of sales and rentals to businesses where the tax is paid directly by the buyer (such as commercial or industrial oil purchase).
- **Business Operating:** Purchases for which businesses pay Use Tax, i.e., for items that are used by the business in its operation (like shelving and machinery) and not re-sold to consumers.
- **Building Supply:** Durable equipment sales, contractors' sales, hardware stores and lumberyards.
- **Food Stores:** All food stores from large supermarkets to small corner food stores. The values here are snacks and non-food items only, since most food intended for home consumption is not taxed.
- **General Merchandise:** In this sales group are stores carrying lines generally carried in large department stores. These include clothing, furniture, shoes, radio-TV, household durable goods, home furnishing, etc.
- **Other Retail:** This group includes a wide selection of taxable sales not covered elsewhere. Examples are dry good stores, drug stores, jewelry stores, sporting good stores, antique dealers, morticians, bookstores, photo supply stores, gift shops, etc.
- **Auto Transportation:** This sales group includes all transportation related retail outlets. Included are auto dealers, auto parts, aircraft dealers, motorboat dealers, automobile rental, etc.
- **Restaurant/Lodging:** All stores selling prepared food for immediate consumption. The Lodging group includes only rental tax.

(2) *A brief historical perspective on how and why the current economy of the community and region developed.*

The growth of manufacturing, which had employed most in the workforce for generations, occurred principally in larger communities like Bath, Brunswick, and Portland, which benefited from coastal harbors, and inland along larger rivers like the communities of Lewiston, Auburn and Augusta. Improvement in the roadway networks, especially during the second half of the

twentieth century, allowed more people to live farther from their workplaces in search of less expensive land and housing. Service sector employment (both public and private, and in low, moderate and high wage occupations) has surpassed manufacturing over the past four decades. Commuting has sustained predominantly residential communities like Bowdoinham. Nevertheless, there are important businesses located in the Town that provide needed services to residents. There have been and continue to be opportunities for business development that is in keeping with the character of Bowdoinham like small-scale, traditional trades, agricultural, and home-based occupations. Telecommunications and improved broadband services allow more people to work where they want to, which is now often closer to where they have chosen to live. Key businesses that have closed since 2000: FHC, Inc., Hilltop Log Homes and Downeast Credit Union.

- (3) *A list of local and regional economic development plans developed over the past five years, which include the community.*

The Midcoast Economic Development District, which includes Sagadahoc County and surrounding areas, prepares annual Comprehensive Economic Development Strategy (CEDs) reports. These reports outline economic trends and inventory planning and projects underway that seek to improve the economy by creating or retaining employment and services, and proposals for which there is community interest and for which funding from the U.S. Economic Development Agency is possible. Bowdoinham projects and proposals were included in the 2008, 2009, and 2011 CEDs. Among these plans and projects were the Merrymeeting Trail, Walkable Village Plan, Farmer’s Market, Bowdoinham Arts Center, Topsham’s Military Redevelopment Zone (which included parcels in Bowdoinham), and Habitat for Humanity.

- (4) *Where does the community’s population work and where do employees in your community reside? A description of the major employers in the community and labor market area and their outlook for the future.*

Most Bowdoinham residents who work do so in Brunswick, Bath or Bowdoinham. The next table shows the communities in which Bowdoinham residents worked in 2000, the most recent year for which this data is available.

Workplaces of Bowdoinham Residents in 2000		
Community	Count	Percent
Brunswick	274	19.1%
Bath	198	13.8%
Bowdoinham	198	13.8%
Freeport	110	7.7%
Portland	109	7.6%
Topsham	81	5.7%
Augusta	77	5.4%
Lewiston	39	2.7%
Richmond	39	2.7%
Westbrook	23	1.6%
Yarmouth	23	1.6%
Falmouth	17	1.2%
West Bath	15	1.0%

Workplaces of Bowdoinham Residents in 2000		
Community	Count	Percent
Auburn	14	1.0%
South Portland	13	0.9%
Scarborough	12	0.8%
Wiscasset	12	0.8%
Windsor	11	0.8%
Bridgton	10	0.7%
Waterville	10	0.7%
Other Maine	116	8.1%
Other State	16	1.1%
Outside USA	14	1.0%
Total in 2000	1,431	100%

Source: US Census

Notes: The percent figures are rounded,
2010 Workplace Data is not available.

Of those who work in Bowdoinham, most are also residents of the Town, almost 55% in 2000. The balance is largely from residents of nearby communities in Sagadahoc, Cumberland and Lincoln Counties. More recent data is not available from the Census.

Resident Community of those who work in Bowdoinham		
Community	Count	Percent
Bowdoinham	198	54.8%
Topsham	42	11.6%
Bowdoin	24	6.6%
Brunswick	20	5.5%
Richmond	14	3.9%
Wiscasset	11	3.0%
Portland	8	2.2%
Bath	7	1.9%
Lisbon	6	1.7%
Harpwell	6	1.7%
Whitefield	6	1.7%
Randolph	5	1.4%
Woolwich	5	1.4%
Phippsburg	4	1.1%
Dresden	2	0.6%
West Bath	2	0.6%
Arrowsic	1	0.3%
Total in 2000	361	100.0%

Source: US Census

Notes: The percent figures are rounded,
2010 Workplace Data is not available.

Most employers in Bowdoinham employ just a few people each. The next table shows local employers with five or more employees, as reported to the Maine Department of Labor. Town government and education provide many of the jobs available in Bowdoinham. Declining school enrollments and the poor economy will continue to stress local government and school districts to reduce expenditures, often through staff downsizing. Private sector employment depends also on the incomes of area residents and so may face continued difficulties until the regional, State and national economies improve.

Employers in Bowdoinham with 5 or more employees each in 2010			
Company Name	Partial Address	Sector	Employee Range
6 Cents Diversified Inc	Post Rd	Real Estate	5-9
Bowdoinham Community School	Cemetery Rd	Schools	20-49
Bowdoinham Country Store	Bridge	Grocers-Retail	10-19
Bowdoinham Linen Svc	Fisher Rd	Linen Supply	5-9
Brian B Smith Surveying Inc	Main St	Surveyors	5-9
Cumberland County Glass	Pond Rd	Glazing	20-49
Fox Real Estate	Main St	Real Estate	5-9
Hooper Construction	Wildes Rd	General Contractors	5-9
Richmond Aero Marine	River Rd	Boat Dealers	10-19
Robert's Auto Body & Repair	Bay Rd	Automotive Repair	5-9
T & H Excavation Inc	Millay Rd	Excavation Site Work	5-9
Town Landing Place	Main St	Restaurant	5-9
Bowdoinham Town Office	School St	Government	10-19
Youth Alternatives-Perry's Pl	Fisher Rd	Child and Youth Services	5-9

Source: Maine Department of Labor

The largest single employer in the region remains the Bath Iron Works, with over 5,000 employees. It depends upon federal government contracts to build and repair military vessels. The medical sector provides a significant amount of employment (in low, moderate and high wage positions). Given the forecasted aging of the region's population, this sector is likely to continue growing regardless of the overall condition of the State or national economy. Retail and education are also noteworthy regional employers. A large component of these sectors is dependent upon markets outside of the region and State. For education, Bowdoin College attracts qualified students who can afford its relatively high tuition or can receive loans or scholarships. For retail, LL Bean's market is based on customers who live in the U.S. and abroad. Based upon solid reputations, both of these entities are poised to benefit from an upturn in the national economy should that occur.

Brunswick Micropolitan Area Major Employers with 250+ employees each in 2010		
Company Name	Location	Sector
Bath Iron Works	Bath	Shipbuilding, repair
Bisson Moving & Storage	Brunswick	General Freight Trucking
Bowdoin College	Brunswick	Education
LL Bean Mfg	Brunswick	Manufacturers
Mid Coast Hospital	Brunswick	Medical, hospitals
Naval Air Station	Brunswick	Military
Parkview Adventists Medical	Brunswick	Medical, hospitals
Radiology Specialists of Maine	Brunswick	Medical, hospitals
Walmart Supercenter	Brunswick	Retail

Source: Maine Department of Labor

The Brunswick Micropolitan Area includes Brunswick, Harpswell, Dresden, Westport, Wiscasset, Arrowsic, Bath, Bowdoin, Bowdoinham, Georgetown, Perkins UT, Phippsburg, Richmond, Topsham, West Bath, and Woolwich.

The State's major private sector employers are located in service center communities like Augusta, Bangor, Bath, Brunswick and Portland. Most of these employers have multiple locations.

Major Employers in Maine				
Rank	Company Name	Location	Employment	Sector
1	Hannaford Brothers	Statewide	7,001 to 7,500	Supermarkets
2	Walmart / Sam's Club	Statewide	7,001 to 7,500	Department stores
3	Maine Medical Center	Portland	6,001 to 6,500	Medical, hospitals
4	Bath Iron Works	Bath	5,001 to 5,500	Shipbuilding, repair
5	LL Bean Inc	Statewide	4,001 to 4,500	Mail order, clothing

Source: Maine Department of Labor, 2011

- (5) *A description of any economic development incentive districts, such as tax increment financing districts, in the community.*

Bowdoinham established a municipal twenty-year tax increment financing (TIF) district in 2000. The purpose of the TIF was to attract quality employment and expand the municipal tax base. TIF revenue has been designated to support its administration by funding the position of Economic and Community Development Director, planning initiatives for small businesses to expand employment opportunities for low and moderate-income persons, increasing and improving public infrastructure, mitigating adverse impacts from development, and removing regulatory barriers to economic and community development.

Analysis

- (1) *Is the economy experiencing significant change, and how does this, or might this, affect the local population, employment, and municipal tax base?*

Growth in the local economy has been inhibited by the poorly performing statewide and national economies. The size of the local labor force has remained relatively unchanged over the past ten years and local wages have been stagnant over the past five years. While the number of Bowdoinham businesses has increased modestly, total local employment is down. Total unemployment has increased at the Town, County and State levels. Bowdoinham residents, however, are better off income wise on average than are County residents and State residents. This is due in large part to higher educational attainment locally, and an ability and willingness of Bowdoinham residents to commute to areas with greater employment opportunities outside of the Town. Importantly, as described in the Population and Demographics Chapter, the Town's population is aging, with more retirees who are not dependent upon the local economy for their income.

The municipal tax base is generated predominately from residential property taxes. See the Fiscal Chapter for more information.

- (2) *Does the community have defined priorities for economic development? Are these priorities reflected in regional economic development plans?*

The priorities for economic development are generated through public input and the Community Development Advisory Committee who advises the Select Board, which sets local economic development policies. The Economic and Community Development Director provides staffing and guidance. Priorities are formalized in the committee's work plan on an annual basis. Some of these priorities are communicated to the Midcoast Economic Development District, which drafts annual updates to its Comprehensive Economic Development Strategy (CEDS) report that covers a multi-county region. See the Conditions and Trends section.

The Town's current plans include revitalizing the village area, improving public infrastructure (sidewalks, internet) and amenities (Waterfront Park facilities), growing the Bowdoinham brand and increasing the number of visitors (through events, ecotourism and agri-tourism) that will encourage more people to use the village and support existing businesses.

- (3) *If there is a traditional downtown or village center(s) in the community? If so, are they deteriorating or thriving?*

The Bowdoinham village area retains its historic architecture of civic, commercial, religious, and residential buildings. There has been little new development in the Village area. The Village is being maintained, improvements are being made, and many more are wanted. Sidewalks have been installed; waterfront improvements and other investments have been made. See the Transportation Chapter and Public Facilities Chapter for a description of these efforts.

- (4) *Is tourism an important part of the local economy? If so, what steps has the community taken to support this industry?*

As shown in the Population and Demographics Chapter, Bowdoinham has a very small seasonal population. Tourism is currently a minor part of the community at present. Efforts to improve the local economy include expanding tourism, for example, events, agri-tourism, ecotourism, recreation on conserved lands and trails, completing proposed new trail linkages, boating along rivers and agricultural events. See the Recreation Chapter.

- (5) *Do/should home occupations play a role in the community?*

Home occupations do play a role in the Town, as home occupations and home based businesses make up the majority of the Town's businesses. The Town estimates there are approximately 50 households who have home occupations or home-based businesses. The Land Use Ordinance allows these uses with standards to protect the residential character of the houses in which such occupations are located. In 2009, the Town revised its Land Use Ordinance to allow for home occupations and home-based businesses through a simplified permit process.

- (6) *Are there appropriate areas within the community for industrial or commercial development? If so, are performance standards necessary to assure that industrial and commercial development is compatible with the surrounding land uses and landscape?*

There are no areas suitable for heavy industry. Areas most suitable for light industrial or commercial development in Bowdoinham include the area around the highway interchange, the village area and along Route 201. The Town adopted performance standards in 2008 to address good neighbor concerns.

- (7) *Are public facilities, including sewer, water, broadband access or three-phase power, needed to support the projected location, type, and amount of economic activity, and what are the issues involved in providing them?*

The small-scale and traditional type of development does not necessarily require significant public expenditure for new infrastructure. If large-scale development were sought, new infrastructure would likely be needed. Public water is available in the village area. The Town does not have public sewer, which is a barrier for new development in the village area. Three-phase power is needed along Pond Road to support the light manufacturing at the old Hilltop Log Homes facility. Broadband access throughout Town would allow for more home-based businesses and home occupations. See the Public Facilities Chapter and Existing Land Use Chapter for the limitations that this places on additional development.

The fundamental concern in providing new public facilities is cost. Current municipal revenues are not sufficient to upgrade services to subsidize new large-scale development. See the Fiscal Capacity Chapter for the Capital Investment Plan and for information on reserve accounts.

(8) If there are local or regional economic development incentives such as TIF districting, do they encourage development in growth areas?

A tax increment financing (TIF) district was established in 2000, however the Town currently does not have an established growth area.

(9) How can/does the community use its unique assets such as recreational opportunities, historic architecture, civic events, etc. for economic growth?

The Town is currently working to develop plans to capitalize on its assets in order to grow its economy. Some ongoing projects include:

- Developing the Merrymeeting Trail, a multi-community trail to encourage recreation for residents and visitors.
- The Town supports the Farmer's Market, which provides a venue for local farmers.
- Town sponsors Celebrate Bowdoinham, an annual community celebration.
- The development of a brochure about Bowdoinham.
- The development of a paddle brochure for Bowdoinham.

Agriculture & Forestry

Conditions & Trend

(1) *The community's Comprehensive Planning Agriculture and Forestry Data Set prepared and provided to the community by the Department of Agriculture, the Maine Forest Service, and the Office, or their designees.*

See the map titled Farmland Soils and Hydric Soils for the location of Prime Farmland soils (USDA defined), soils categorized as Additional Farmland of Statewide Importance (State defined), and Additional Farmland Soils of Local Importance (Maine NRCS defined for Sagadahoc County) that includes non-forested open lands with these soils:

- AaC Adams loamy sand, 8 to 15 percent slopes
- BuB2 Buxton silt loam, 0 to 8 percent slopes, eroded
- BuC2 Buxton silt loam, 8 to 15 percent slopes, eroded
- CfC2 Charlton fine sandy loam, 8 to 15 percent slopes, eroded
- ChB Charlton very stony fine sandy loam, 0 to 8 percent slopes (Prime farmland if stones removed)
- ChC Charlton very stony fine sandy loam, 8 to 15 percent slopes (Statewide importance if stones removed)
- EmC2 Elmwood fine sandy loam, 8 to 15 percent slopes, eroded
- HfC2 Hartland very fine sandy loam, 8 to 15 percent slopes, eroded
- HkC Hinckley gravelly sandy loam, 8 to 15 percent slopes
- HrB Hollis fine sandy loam, 0-8 percent slopes
- MeC Melrose fine sandy loam, 8 to 20 percent slopes
- MkC2 Merrimac fine sandy loam, 8 to 15 percent slopes, eroded
- PfB Paxton very stony loam, 0 to 8 percent slopes (Prime farmland if stones removed)
- PfC Paxton very stony loam, 8 to 15 percent slopes (Statewide importance if stones removed)
- WsB Woodbridge very stony loam, 0 to 8 percent slopes (Prime farmland if stones removed)
- SuC2 Suffield silt loam, 8 to 15 percent slopes, eroded
- SyB Sutton very stony loam, 0 to 8 percent slopes (Prime farmland if stones removed)
- SyC Sutton very stony loam, 8 to 15 percent slopes (Statewide importance if stones removed)
- ScA Scantic silt loam, 0 to 3 percent slopes

County-level agricultural data from the U.S. Department of Agriculture is shown in the next two tables. Town-level USDA data is not available.

Sagadahoc County 2007 Agricultural Census Detail	
Sales By Commodity Group	Value
Fruits, tree nuts, and berries	\$271,000
Nursery, greenhouse, floriculture, and sod	\$580,000
Other crops and hay	\$244,000
Poultry and eggs	\$34,000
Cattle and calves	\$123,000

Milk and other dairy products from cows	\$709,000
Hogs and pigs	\$44,000
Sheep, goats, and their products	\$42,000
Top Crop Items	
	Acres
Forage - hay, grass silage, greenchop	4,232
Cut Christmas trees	70
Land in berries	66
Vegetables harvested for sale	51
Top Livestock Inventory Items	
	Number
Cattle and calves	1,347
Layers	1,212
Broilers and other meat-type chickens	324
Sheep and lambs	309
Horses and ponies	262

Source: USDA Agricultural Census

Farms increased in number but decreased in average size from 1997 to 2007 in Sagadahoc County.

Sagadahoc County 1997, 2002 and 2007 Agricultural Census Comparison				
Category	1997	2002	2007	Percent Change
Number of Farms	153	158	183	19.6%
Land in Farms	20,320 acres	20,171 acres	18,616 acres	-8.4%
Average Size of Farm	133 acres	128 acres	102 acres	-23.3%
Market Value of Products Sold	\$3,184,000	\$4,271,000	\$2,583,000	-18.9%
Value of crops, nursery, greenhouse	\$1,521,000	NA	\$1,276,000	-16.1%
Value of livestock, poultry, related products	\$1,663,000	NA	\$1,307,000	-21.4%
Government Payments	\$32,000	\$81,000	\$171,000	434.4%

Source: USDA Agricultural Census

Most timber harvesting in Bowdoinham has been done through the selection method, with an annual average of 174.3 acres out of a total annual average harvest of 182.6 acres, as shown in the next table.

Bowdoinham Summary of Timber Harvest Information						
Year	Selection harvest (acres)	Shelterwood harvest (acres)	Clearcut harvest (acres)	Total Harvest (acres)	Change of land use (acres)	Number of active Notifications
1991	100	45	1	146	0	9
1992	171	0	20	191	20	9
1993	74	0	0	74	0	5
1994	400	0	4	404	2	11

Bowdoinham Summary of Timber Harvest Information						
Year	Selection harvest (acres)	Shelterwood harvest (acres)	Clearcut harvest (acres)	Total Harvest (acres)	Change of land use (acres)	Number of active Notifications
1995	128	0	2	130	0	11
1996	77	0	5	82	11	8
1997	112	40	0	152	0	9
1998	120	0	0	120	0	7
1999	16	0	0	16	1	12
2000	50	0	0	50	6	21
2001	162	0	0	162	0	18
2002	180	0	0	180	0	14
2003	175	0	0	175	0	16
2004	562	40	0	602	0	20
2005	245	0	0	245	4	15
2006	112	0	0	112	2	14
2007	256	0	0	256	0	13
2008	280	0	0	280	53	14
2009	92	0	0	92	50	15
Total	3,312	125	32	3,469	149	241

Source: Maine Department of Conservation, Maine Forest Service

Note: To protect confidential landowner information, data is reported only where there are three or more landowner reports of harvesting in the town.

(2) *A map and/or description of the community's farms, farmland, and managed forest lands and a brief description of any that are under threat.*

In 2011, Bowdoinham had approximately 2,465 acres of farmland and 2,110 acres as hayland (Town Assessor records). A significant portion of these lands is protected from development through conservation easements or as reserves. See the map titled Farmland/Hayland & Current Use Tax Programs for the location of farmland and the participation in tree growth, farmland and open space tax programs. See the map titled Farmland Soils and Hydric Soils for the locations of areas best suited for agricultural activities based upon soil conditions. See the map titled Landcover for areas under cultivation and for use as pasture or for haying. These uses have been estimated through satellite imagery in 2004 as encompassing about 14.6% of the town's total land area.

There are two major types of soil in Bowdoinham; the Hadley silt loam bordering the Bay requiring the water from the Bay for irrigation, and the heavy Buxton silt loam soils that are visible as the gently rolling fields in the rest of the Town. The prime farmland on the Bay is well suited to the production of high value, intensely managed vegetable crops. They include carrots, parsnips, potatoes, radishes, cucumbers, peas, tomatoes, etc. plus strawberries, herbs and flowers.

The prime farmland away from the Bay is suitable for orchards, short season vegetables and livestock production. The remains of many once successful apple orchards are still visible on the sloping well-drained hills. With the closing of the last canning factories, the corn, squash, turnip, beans and cabbage are no longer grown on these heavy soils. Currently and historically most of

the land under active cultivation is used for livestock production either for grazing or for hay, silage, or corn crops.

Active Farms with Land Operations in Bowdoinham as of 2013		
Name	Location	Organic Certified Products
Atlantic Organics Inc.	Pork Point Rd	Yes
Fairwinds Farm	Browns Point Rd	No
Fishbowl Farm	Browns' Point Rd	Yes
Lalibela Farm	Carding Machine Rd	Yes
Life Force Farm	Carlson Cross Rd	Yes
Particular Produce Farm	Stevens Rd	No
Six River Farm	Centers Point Rd	Yes
Stonecipher Farm	River Road	Yes
Turning Wheel Farm	White Rd	Yes
Applecreek Farm	Millay Rd	Yes
Miller Livestock Company	Post Rd	No
Hobart Farm	Ridge Rd	No
Kennebec Flower Farm	Pork Point Rd	No
Christopher Farm	White Rd	No
Black Watch Farm LLC	Ridge Rd	No
Papps'a Sugar Shack	Post Rd	No
Bees - 'N' - Me	Post Rd	No
Campo di Fiori	Fisher Rd	No
Hilltop Raspberry Farm	Post Rd	No
Kiko Goat Farm	Millay Rd	No
Morin	River Rd	No
Merrymeeting Farm	Dinsmore Cross Rd	No

Source: Town of Bowdoinham

Almost 56% of the Town is forested. See the map titled Landcover for these areas. Nearly all forestlands in the Town are privately owned. There are two parcels of state-owned land. Reed's Point is a 335-acre wildlife preserve at the end of the Wildes Point Road where over half the land is in forest. At the junction of Rt. 24 and the Pork Point Road is the Bachman property, which is owned and managed by the Maine State Department of Inland Fisheries and Wildlife. Forests dominate this 150-acre parcel.

Areas most threatened include those with suitable soils for farming that are not under a conservation easement.

A survey completed in 2012 of farmers in Bowdoinham had a 57% response rate, representing people who farm about 767.5 acres within the town. Some farmers recommended promoting and marketing farm products locally, making land use ordinance revisions to affirmatively protect agriculture, and limiting other types of development that compete for land, like residential. The observations and recommendations of the survey respondents have been considered by the town in the formulation of this comprehensive plan's policies and strategies to protect and enhance agriculture. Please refer to Agricultural Survey Results, dated February 24, 2012.

(3) Information on the number of parcels and acres of farmland, tree growth, and open space enrolled in the state's farm, tree growth, and open space law taxation programs, including changes in enrollment over the past 10 years.

Current Use Tax Programs Bowdoinham				
	2001		2011	
Category	Properties	Acres	Properties	Acres
Open Space Tax Program	16	446	24	513
Tree Growth Tax Program	58	2,894	65	2,621
Farmland Tax Program	40	1,210 (cropland/pasture) 1,047 (woodland)	51	1,162(cropland/pasture) 1,386 (woodland)

Source: Town Assessor

2010 Farmland Programs Bowdoinham							
# of parcels	Cropland acres	Woodland acres	Cropland valuation	Woodland valuation	Withdrawn (parcels/acres)		Penalties assessed
46	1,169.81	1,138.91	\$729,436	\$299,819	3	42	\$4,897.09

Source: Maine Revenue Services

2010 Open Space in Bowdoinham					
# of parcels	Total acres	Total valuation	Withdrawn parcels / acres		Penalties assessed
22	503.27	\$736,004	0	0	0

Source: Maine Revenue Services

The current use tax programs provide a property tax savings to landowners of farmland and forestland who choose to participate. Under these programs, land is taxed at its current use rather than for its development potential (full-market value). Should enrolled landowners leave these programs, they are assessed a penalty to make up the difference in valuation between current use and full-market value for development. The next table summarizes these programs.

Summary of Current Use Tax Programs			
Program	Farmland Program (Tax Bulletin #20)	Open Space Program (Tax Bulletin #21)	Tree Growth Program (Tax Bulletin #19)
Purpose	To encourage farmland owners to maintain and improve land that is used for farming, agricultural or horticultural activities.	To encourage landowners of open, undeveloped land to prevent or restrict its use from development by conserving scenic resources, enhancing public recreation, promoting game management or	To encourage forest landowners to retain and improve their forestlands; to promote better forest management; and to support the overall forest products industry in Maine.

Summary of Current Use Tax Programs			
Program	Farmland Program (Tax Bulletin #20)	Open Space Program (Tax Bulletin #21)	Tree Growth Program (Tax Bulletin #19)
		preserving wildlife or wildlife habitat.	
Types of Land Cover	Mixed – annual and perennial crops, pasture, orchards, blueberries, wetlands, woodland and wasteland.	Undeveloped acres – open and/or wooded land that is not intended to be developed for commercial or residential purposes.	Forested land used primarily for the growing of trees used to produce commercial forest products.
Length of Time	Permanent: May be withdrawn with payment of a penalty; must be withdrawn if used for non-conforming purposes.		
Enrollment	Voluntary enrollment by landowner. The Town sets the value based upon value of the land as farmland only. State published per acre values recommended but not required.	Voluntary enrollment by landowner. The Town sets the valuation based upon comparable sales statutorily prescribed percentage reduction from full value.	Voluntary enrollment by landowner. The State tax Assessor determines the 100% valuation per acre for softwood, hardwood, and mixed wood cover types by region each year. Areas within a parcel other than classified forest acres must be valued on a fair market value basis.
Tax Implications	Landowner's proportionate tax burden is reduced.		
Municipal Benefit	Avoids costs associated with development; state subsidies are positively impacted.		Avoids costs associated with development; state subsidies are positively impacted; direct subsidy available from the State.

Source: Maine Revenue Service

(4) A description of any community farming and forestry activities (e.g. community garden, farmer's market, or community forest).

The following table lists agricultural and forestry related programs that are active within Bowdoinham.

Program	Occurs (Seasonally, Weekly, Monthly)	Organized/Managed
Farmer's Market	May – October on Saturdays 8:30 AM- 12:30 PM, at the	Farmers
Food Freaks	School year	Elementary School

Source: Town

Analysis

- (1) *How important is agriculture and/or forestry and are these activities growing, stable, or declining?*

Agricultural activities are essential to Bowdoinham, its history, rural character and economic future. A significant portion of the town's land is devoted to agricultural use. See the figures in the Conditions and Trends section and the maps titled Farmland/Hayland & Current Use Tax Programs, Farmland Soils and Hydric Soils, and Landcover. The amount of conservation of farm and forestland in the town sets it apart from neighboring communities. Bowdoinham has the highest concentration of organic farmers in the state. Due to this and to the rise of niche farming, the agricultural sector has grown in importance over the past decade and has potential for further growth as the appreciation of locally grown organic food increases.

In 2010, the Census recorded 33 Bowdoinham residents (and 261 Sagadahoc County residents) worked in farming, fishing, and forestry occupations. These figures do not reflect the part-time, seasonal, migrant and informal employment in agriculture. The public's appreciation of the value of locally raised healthy food has boosted the market for these commodities. Accordingly, grocery stores and supermarket chains are offering more local produce and related goods for sale. The region's population could become a larger market for dairy and crops raised within town.

In addition to benefiting people who choose to farm in Bowdoinham, and those who want to purchase locally grown food, farmland has the following beneficial impacts on the community:

- Aesthetic. Open rolling fields define the character of Bowdoinham and afford a pleasant visual vista for people driving along the roads.
- Recreation opportunities. Farm fields offer space for cross country skiing, snowmobiling, horseback riding and all-terrain vehicles, with the permission of the landowner or farmer.
- Avoided costs. It is important to bear in mind that there are no real costs to the town for farmland. There are no education, busing, road maintenance fire and police costs per acre as there are for residential development.

A significant amount of land is enrolled in the tree growth program for individual woodlot owners. There is potential for an increase in such activities, however, large-scale industrial forestry, does not occur and is unlikely in the foreseeable future.

- (2) *Is the community currently taking regulatory and/or non-regulatory steps to protect productive farming and forestry lands? Are there local or regional land trusts actively working to protect farms or forest lands in the community?*

Bowdoinham's Land Use Ordinance allows agricultural and forestry activities town wide, with limitations in certain shoreland areas as required by the Maine Department of Environmental Protection. The Town does not have any regulations to protect productive farming and forest lands.

The town encourages farmers and woodlot owners to place their lands into conservation, or to enroll in current use tax programs. Voluntary actions by landowners to seek conservation

easements or to enroll in tax programs are the preferred strategy for protecting farmland and forestland because such approaches respect individual choice and property rights.

There are land trusts active in the community including the Friends of Merrymeeting Bay, Kennebec Estuary Land Trust, and the Maine Farmland Trust.

(3) Are farm and forest land owners taking advantage of the state's current use tax laws?

Yes, please see the figures in the Conditions and Trends section.

(4) Has proximity of new homes or other incompatible uses affected the normal farming and logging operations?

Within the past five years, the Town Code Enforcement Office has received several complaints from the abutting owners near agricultural and forestry operations. The Town has not received any complaints from farmers and woodlot owners about new development around their properties. The Town can advise farmers and woodlot owners on best management practices and put these persons in contact with state officials for further guidance to reduce complaints from neighbors.

(5) Are there large tracts of agricultural or industrial forest land that have been or may be sold for development in the foreseeable future? If so, what impact would this have on the community?

Yes. There are several undeveloped parcels along Browns Point Road, Center Point Road and on either side of River Road just north of the village area and these parcels contain Prime Farmland and/or Farmland of Statewide Importance. Some of these parcels are either state-owned or have conservation easements. If these properties are sold it would affect the viability of some farming operations, due to loss of hayland or crop production. If development occurred on the large parcels abutting existing agricultural and woodlot activities, it would be expected that complaints from the new residents in these areas regarding the noise or smell of these operations could be made. Niche farming, however, has demonstrated agricultural viability even on smaller lots with fragmentation between residential and agricultural uses.

(6) Does the community support community forestry or agriculture (i.e. small woodlots, community forests, tree farms, community gardens, farmers' markets, or community-supported agriculture)? If so, how?

Yes. The community currently supports a 22 week Farmers' Market that is open from May to October on Saturdays from 8:30am to 12:30pm located at the Merrymeeting Grange, and 2 Bowdoinham farmers operate a CSA. The Town assists the Farmers' Market with funding & promotion. The Town also has a business website which allows businesses/farmers to have a free webpage on the Town's site.

(7) Does the community have town or public woodlands under management, or that would benefit from forest management?

The town owns a small woodlot, but it is not currently in active use.

Natural Resources

Conditions & Trend

(1) *The community's Comprehensive Planning Natural Resources Data Set prepared and provided to the community by the Department of Inland Fisheries and Wildlife, Department of Environmental Protection and the Office, or their designees.*

The data set has been incorporated and updated in these maps:

- Habitat and Marine Resources for Focus Areas of Statewide Ecological Significance: Kennebec Estuary, Maine Natural Areas Program locations, Approximate Deer Wintering Areas, Moderate and High Value Freshwater Wetlands, Waterfowl/Wading Bird Habitat, Threatened or Special Concern (Bald Eagle, Ribbon Snake and Tidewater Mucket).
- Water Resources for National Wetland Inventory wetland classifications, drainage divides, identified vernal pools, active public water systems, and water quality classifications. Also shown on this map are threats to water quality and habitat: a wastewater outfall and overboard discharges.
- Regionally Significant Habitats and Undeveloped Blocks for undeveloped lands by size, lands in conservation currently, potential wildlife corridors and habitats of interest.

For more detailed habitat information, see the State-prepared map titled High Value Plant & Animal Habitats, which includes the location of these High Value Plant and Animal Habitats in Bowdoinham:

High Value Plant and Animal Habitats			
Map ID #	Name	State Status	Category
1.	Bald Eagle	SC	Rare Animal Location/Habitat
2.	Eaton's Bur-marigold	SC	Rare Plant
3.	Estuary Bur-marigold	SC	Rare Plant
4.	Estuary Monkeyflower	SC	Rare Plant
5.	Freshwater Tidal Marsh	-	Rare Plant
6.	Horned Pondweed	SC	Rare Plant
7.	Long's Bitter-cress	T	Rare Plant
8.	Mudwort	SC	Rare Plant
9.	Parker's Pipewort	SC	Rare Plant
10.	Pygmyweed	SC	Rare Plant
11.	Ribbon Snake	SC	Rare Animal Location/Habitat
12.	Spongy Arrowhead	SC	Rare Plant
13.	Stiff Arrowhead	T	Rare Plant
14.	Tidewater Mucket	T	Rare Animal Location/Habitat
15.	Water Pimpernel	SC	Rare Plant
16.	Yellow Pond-lily	SC	Rare Plant

Source: Maine Department of Inland Fisheries and Wildlife, August 2011

Notes: Status Abbreviations: T = Threatened SC = Special Concern

There are no Endangered, Possibly Extirpated or Endangered Breeding populations

identified in Bowdoinham.

See the Water Resources Chapter for information on water bodies and wetlands in Bowdoinham and their associated habitats.

- (2) *A map or description of scenic areas and scenic views of local importance, and regional or statewide importance, if available.*

Bowdoinham's physical character is shaped in large part by its scenic resources, which improve the local quality of life and enhance the economic value of surrounding properties. The rolling topography, rivers and streams, and rural agricultural landscape provide many scenic views. Perhaps the most important scenic views from conserved lands, public roads, water bodies and public recreation areas, for example, in the village area and the town landing in Philip Maily Park.

Analysis

- (1) *Are any of the community's critical natural resources threatened by development, overuse, or other activities?*

These areas within Bowdoinham have critical natural resources that could be threatened by development or overuse, and more generally, the Kennebec Estuary (A Focus Area of Statewide Ecological Significance), the Maine Natural Areas Program locations, forested wetlands, and select wetlands under 10 acres in size that have limited regulation by the Maine Department of Environmental Protection (DEP). For these locations, see the maps titled Habitat and Marine Resources, Water Resources, and Regionally Significant Habitats and Undeveloped Blocks.

To preserve these areas, the use of conservation easements or purchases may be more tenable to residents and voters than regulations. Easements and conservation purchases result in permanent protection while municipal regulations are subject to future amendments or repeal. Protection for critical natural resources could be improved by incorporating the Beginning with Habitat information into the land use regulations and the permitting process.

- (2) *Are local shoreland zone standards consistent with state guidelines and with the standards placed on adjacent shorelands in neighboring communities?*

The Town's shoreland zoning ordinance provisions are consistent with current State law and have been approved by the Maine DEP. Shoreland zoning districts of adjacent shorelands in the neighboring communities of Richmond and Topsham are consistent with Bowdoinham's provisions for these border area shorelands.

- (3) *What regulatory and non-regulatory measures has the community taken or can the community take to protect critical natural resources and important natural resources?*

The Town has and can continue to ensure that its ordinances reflect current State law and that the Official Shoreland Zoning Map is updated on a regular basis with accurate data of lands subject to regulation.

The Town has and can continue to work with non-profit, local, state, and national groups to acquire property in critical areas for conservation outright or through easements, and to maintain and responsibly use existing conserved areas. See the local and regional partners listed below.

(4) Is there current regional cooperation or planning underway to protect shared critical natural resources? Are there opportunities to partner with local or regional groups?

No, however in the past the Sagadahoc Region Rural Resources Initiative (SRRRI) includes representatives of twelve municipalities and local, regional and statewide resource protection and land conservation organizations. Participants had been working together from 2004-2009 to devise a regional land conservation strategy and to develop tools to identify and protect rural and natural resources of regional significance. The SRRRI municipalities include Arrowsic, Bath, Bowdoin, Bowdoinham, Brunswick, Georgetown, Harpswell, Phippsburg, Richmond, Topsham, West Bath and Woolwich.

There are opportunities to continue to partner with these local, regional, state and national organizations and agencies, which are working to protect shared critical natural resources in our region including the Kennebec Estuary:

- Cathance River Education Alliance (Topsham)
- Friends of Merrymeeting Bay (Richmond-Bowdoinham)
- Friends of the Kennebec River Rail Trail (Brunswick)
- Kennebec Estuary Land Trust (Bath)
- Kennebec River Network (Augusta)
- Land for Maine's Future Program (Augusta)
- Maine Department of Environmental Protection (Augusta)
- Merrymeeting Audubon Society Chapter (Falmouth)
- National Park Service (Maine Office: Brunswick)
- Natural Resources Council of Maine (Augusta)
- Topsham Trail Riders (Topsham)
- University of Maine Cooperative Extension (Androscoggin and Sagadahoc Counties)

Water Resources

Conditions & Trend

(1) *The community's Comprehensive Planning Water Resources Data Set prepared and provided to the community by the Department of Inland Fisheries and Wildlife, the Department of Environmental Protection and the Office, or their designees.*

See the map titled Water Resources for the locations in Bowdoinham of National Wetlands Inventory wetlands by type, water body classifications, wetland boundaries (drainage divides), wastewater outfall and overboard discharges, and identified significant vernal pools.

The next table shows information on the Bowdoinham Water District for the most recent year available from the Maine Drinking Water Program, as provided in the Comprehensive Planning Water Resources Data Set.

Public Water Supply Information Assessment for the Bowdoinham Water District	
Location of well	Bowdoin
Service Area	Portions of Bowdoin and Bowdoinham
Date	May 1, 2003
Well identification number	90210201
Well type	Gravel well
Well description	Gravel Packed Well, 30 feet (1959)
Overburden thickness	30 feet
Wellhead protection radius around the well	1,100 feet
Reported distance of land control around the well	500 feet
Wellhead Protection Ordinance in effect	No
Existing risk of contamination based on well type and site geology	Moderate risk
Positive coliform test	No
Nitrate test greater than 5 ppm	No
Septic system within 300 feet of the well	No
Existing risk of acute contamination	Low risk
No legal land control or control status is unknown or legal control is less than a 150-foot radius around the well	No
Legal control of at least a 150-foot radius of property around the well	Yes
Legal control of at least a 300-foot radius of property around the well	Yes
Future risk of acute contamination	Low risk
Detection of Chronic Chemical Contaminant	No
Name(s) of Chronic Chemical Contaminant(s) Detected	No chronic chemical contaminants detected.
Total No. Potential Sources of Contamination within WHPA	None reported

Public Water Supply Information Assessment for the Bowdoinham Water District	
Distance to nearest “Significant Potential Source of Contamination”	2,000 feet
Name of nearest “Significant Potential Source of Contamination”	Animal grazing
Existing risk of chronic contamination	Low risk
Legal control of Entire Wellhead Protection Area	No
Legal control of 2500 Phase II/V Waiver Radius	No
Future risk of chronic contamination - Land Ownership / Control	High risk

Source: Maine Drinking Water Program

Maine has four water quality classes of rivers and streams: AA, A, B, and C (Title 38 MRSA Section 465). Each classification assigns designated uses and water quality criteria (narrative and numeric), and may place specific restrictions on certain activities such that the goal conditions of each class may be achieved or maintained.

- Class AA waters are managed for their outstanding natural ecological, recreational, social, and scenic qualities. Direct discharge of wastewater, dams, and other significant human disturbances are prohibited. Tiered aquatic life use goals direct that the biological condition of this classification be approximately Tier 1-2 on the Biological Condition Gradient.
- Class A waters are managed for high quality with limited human disturbance allowed; aquatic life use goal approximately Tier 1-2 on the Biological Condition Gradient. Direct discharges are allowed but highly restricted.
- Class B waters are general-purpose water and are managed to attain good quality water; aquatic life use goal approximately Tier 3 on the Biological Condition Gradient. Well-treated discharges with ample dilution are allowed. *All waterways in Bowdoinham are Class B.* See Title 38 MRSA Sections 467 and 468.
- Class C waters are managed to attain at least the swimmable-fishable goals of the federal Clean Water Act and to maintain the structure and function of the biological community; aquatic life use goal approximately Tier 4 on the Biological Condition Gradient.

Maine Water Quality Criteria for Classification of Fresh Surface Waters				
Classification	Dissolved Oxygen Numeric Criteria	Bacteria (E.coli) Numeric Criteria	Habitat Narrative Criteria	Aquatic Life (Biological) Narrative Criteria
Class AA	As naturally occurs	As naturally occurs	Free flowing and natural	No direct discharge of pollutants; as naturally occurs
Class A	7 ppm; 75% saturation	As naturally occurs	Natural	As naturally occurs
Class B	7 ppm; 75% saturation	64/100 ml (g.m.*) or 427/100 ml	Unimpaired	Discharges shall not cause adverse impact to aquatic life in that

Maine Water Quality Criteria for Classification of Fresh Surface Waters				
Classification	Dissolved Oxygen Numeric Criteria	Bacteria (E.coli) Numeric Criteria	Habitat Narrative Criteria	Aquatic Life (Biological) Narrative Criteria
		(inst.*)		the receiving waters shall be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes to the resident biological community.
Class C	5 ppm; 60% saturation	142/100 ml (g.m.*) or 949/100 ml (inst.*)	Habitat for fish and other aquatic life	Discharges may cause some changes to aquatic life, provided that the receiving waters shall be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community.

Source: Maine Department of Environmental Protection

- (2) *A description of each great pond, river, surface drinking water supply, and other water bodies of local interest including:*
- a. ecological value;*
 - b. threats to water quality or quantity;*
 - c. documented water quality and/or invasive species problems.*

See the map titled Habitat and Marine Resources for the location of the Focus Area of Statewide Ecological Significance: Kennebec Estuary. This area comprises about half of the Town and all of its principal water bodies: Kennebec River, Merrymeeting Bay, Cathance River, Abagadasset River, and tributary rivers, streams and brooks. The information on the ecological value, threats to water quality and the documented water quality that follow were excerpted from the Maine Department of Conservation Beginning with Habitat description of the Kennebec Estuary.

Merrymeeting Bay / Kennebec River

At the heart of the Kennebec Estuary is Merrymeeting Bay, one of the most important waterfowl areas in New England. Six rivers, draining one-third of the state of Maine, converge in Merrymeeting Bay to form an inland, freshwater, tidal delta. Extensive beds of emergent and submerged aquatic vegetation support thousands of ducks, geese, rails, wading birds, and other water-dependent species during spring and fall migrations. Wild rice is common throughout the bay, providing an important food source for migratory waterfowl and other birds such as bobolinks. The intertidal mudflats are also important feeding areas for migrating shorebirds. Floodplain forests and shrub swamps serve as key migratory stopover sites for neo-tropical passerines.

Over 50 species of freshwater fish and ten species of anadromous fish use Merrymeeting Bay, including the rare Atlantic salmon (*Salmo salar*), shortnosed sturgeon (*Acipenser brevirostrum*), and Atlantic sturgeon (*Acipenser oxyrinchus*). At least one rare mussel species, the tidewater mucket (*Leptodea ochracea*), inhabits the bay. One of the small tributaries flowing into Merrymeeting Bay is Maine's only known location for the redfin pickerel (*Esox americanus*). American eels, currently believed to be declining in much of their geographic range, are abundant in parts of the bay.

Merrymeeting Bay has some of the Northeast's best habitat for rare plants associated with tidal freshwater marshes. Several sites around the bay are particularly significant, such as the Cathance River, Chops Creek, Eastern River, Lines Island, Abagadasset Point and River, and Swan Island.

Cathance River

The Cathance River, meaning "crooked river" in Abenaki, is a twenty-mile, roaming river that navigates its way through Bowdoin, Bowdoinham, and Topsham. The surrounding watershed is mostly rural with forests, fields, and agricultural lands. The river and the associated Bradley Pond are known for excellent paddling and fishing. Like many areas of Merrymeeting Bay, the freshwater tidal marshes along the Cathance River are dominated by wild rice (*Zizania aquatica*). Less abundant are pickerelweed (*Pontederia cordata*), water parsnip (*Sium suave*), soft-stem bulrush (*Schoenoplectus tabernaemontanii*), and river bulrush (*Bolboschoenus fluviatilis*). Perhaps the most notable inhabitant of this stretch of river is the globally rare Eaton's bur marigold (*Bidens eatonii*). More than a thousand individuals of this rare plant live along a 300-meter section of the riverbank. Also present are the rare estuary bur marigold (*Bidens hyperborea*), spongy arrowhead (*Sagittaria calycina* ssp. *spongiosa*), Parker's pipewort (*Eriocaulon parkeri*), and Long's bittercress (*Cardamine longii*).

Abagadasset Point to Pork Point

The cove on the north side of Abagadasset Point has a broad, extensive tidal flat of approximately 200 acres with bands of vegetation. The ledgy Abagadasset Point supports small populations of Parker's pipewort, mudwort (*Limosella australis*), water pimpernel, and Eaton's bur-marigold.

Ecological Services of the Focus Area

- Nutrient export and sediment retention resulting in a rich and productive habitat for aquatic organisms
- Cleansing of water from several major river systems
- Protection of downstream areas from flooding

Economic Contributions of the Focus Area

- Coastal wetlands and dune systems protect properties from storm surge and sea-level rise
- Food source and nursery for commercially important shellfish and finfish
- Destination for duck hunters, birders, paddlers, and beachgoers

Invasive Species in the Focus Area

Invasive species such as the common reed (*Phragmites australis*) have expanded rapidly in salt and brackish marshes in parts of New England. While invasive plants do not seem to be a major threat currently in the Kennebec Estuary (Focus Area of Statewide Ecological Significance), their distribution and abundance should be monitored.

Pollution in the Focus Area

Because Merrymeeting Bay drains nearly one third of Maine, the potential for water-quality degradation is high. Both the Androscoggin and Kennebec Rivers have major industries upriver. Although these industries are much cleaner than in years past, contamination remains in the bay's fine-grained sediments. Eagle eggs from Merrymeeting Bay have been found to contain some of the highest levels of PCBs (polychlorinated biphenyls) ever recorded. Mitigating past and future contamination of the watershed will be a continuing challenge.

Tributary Waterways

The tributary waterways in Bowdoinham face the threats noted above for the Kennebec Estuary, and the town-wide threats to water quality noted below.

The Abagadasset River (16 miles in length) comes to Bowdoinham from Gardiner, through Richmond. It runs among extended wetlands between Carding Machine Road and Route 24 and into the Bay just beyond Brown's Point Road.

Baker Brook runs north to south from the Richmond Border until it runs into the Abagadasset River.

The Cathance River (16.4-miles length) forms a horseshoe shape in Southern Bowdoinham. It comes to Bowdoinham from Topsham; Bradley Pond is its headwaters, it flows by a cattle farm in Topsham, but after that, its shores are still undeveloped. It flows though the Village, where the new Cathance landing boat access and Park are along its shores.

Carros Brook or Heath's Brook seems to get its start about a third of a mile East of Millay Road where it crosses I-95. It meanders right through the Village.

Denham Stream is the next stream running north to south. It comes to Bowdoinham from Richmond. It flows between the White Road and the Ridge Road. It appears to have steep slopes. It does not appear to have residences anywhere near it. The predominant land use in the immediate watershed is forestry. It runs into the West Branch of the Cathance.

Mallon Brook seems to get its start west of the Post Road and runs into Sedgely Brook.

Sampson's Creek (or Puddledock) is that body of tidal water next to the gas station, exiting to the Cathance.

Sedgely Brook seems to get its start right in Bowdoinham between I-95 and the Old Post Road. It runs south right in the middle strip of I-95, then crosses under the Ridge Road to enter the top of the West Branch of the Cathance. It runs through hilly country, farm, and forestland; again, no residences appear to be along its shores.

Shinglemen's Creek - Runs into the Cathance about one-half mile North of the Topsham line. It gets its start around I-95.

The West Branch of the Cathance appears to be no more than a mile stream formed by the confluence of the Sedgely and the Denham streams. It runs between the Ridge Road and River Road into the Cathance where the Railroad and Route 24 coincide, very close to the village.

Wetlands

In addition to providing needed habitat for nearly all wildlife species, wetlands provide natural stormwater control capabilities. As natural basins in the landscape, wetlands are able to receive, detain, and slowly release stormwater runoff. Wetland shelves along stream banks naturally regulate floodwaters by providing an area for swollen stream flows to expand and slow, thereby protecting downstream properties. Wetlands act as natural sponges that can hold water, allowing suspended particles such as sediment to settle out. The dense vegetation in most wetlands helps to stabilize soil and slow water flows, thereby reducing scouring and bank erosion.

National Wetlands Inventory (NWI) maps (the basis of wetlands shown on the map titled Water Resources) are interpreted from high altitude photographs. NWI Wetlands are identified by vegetation, hydrology, and geography in accordance with "Classification of Wetlands and Deepwater Habitats" (FWS/OBS-79/31, Dec 1979). The aerial photographs document conditions for the year they were taken. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, State, or local government. NWI maps depict general wetland locations, boundaries, and characteristics. They are not a substitute for on-ground, site-specific wetland delineation.

Vernal Pools

A vernal pool, also referred to as a seasonal forest pool, is a natural, temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet and no viable

populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus* sp.), as well as valuable habitat for other plants and wildlife including several rare, threatened, and endangered species. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition. Whether a vernal pool is a significant vernal pool is determined by the number and type of pool-breeding amphibian egg masses in a pool, or the presence of fairy shrimp, or use by threatened or endangered species. Identified significant vernal pools are shown on the map titled Water Resources.

Town-wide Threats to Water Quality

As noted in the Analyses section, the potential threats to surface and ground water quality come from two categories of discharges: the point sources at the end of a pipe, and the non-point, or dispersed, sources. Bowdoinham is at the end of two long rivers that carry the waste products of numerous paper mills and effluent from many municipal treatment systems.

Non-point source possibilities include malfunctioning septic systems.

There are other potential sources of contamination. They include, but are not limited to:

- Closed dumps in the Denham and Abagadasset Watersheds which are monitored by test wells;
- Fertilizer (nitrates) up river from the site of the chemical plant at an abandoned farm;
- Pesticides, fertilizer, manure, and sludge used in farming and residential lawns and gardens
- Erosion of soil from plowing or wood cutting operations along the streams

It is not known if any of these potential sources of contamination have become actual.

See the map titled Water Resources for the locations of point-source pollution (discharges) in Bowdoinham. See the Marine Resources Chapter for more information on the Town's coastal waterways.

Underground Oil Tanks

There are registered underground oil tanks at two locations in Bowdoinham: Bowdoinham Community School (23 Cemetery Rd) and G&G Gas and Repair Station (50 River Rd). Both sites are in the village area. According to the State, in Bowdoinham most of the registered underground oil tanks have been removed. Given the potential for oil leakage into the surrounding soils and groundwater and the high costs for cleanup of contaminated sites, the removal of underground oil tanks is recommended.

- (3) *A summary of past and present activities to monitor, assess, and/or improve water quality, mitigate sources of pollution, and control or prevent the spread of invasive species.*

The Maine Department of Environmental Protection (DEP) and Department of Marine Resources (DMR) monitor water quality regionally. The State --- monitors water quality at the site of

discharge of treated effluent from the Bowdoinham Community School (RSU/MSAD 75) wastewater outfall and --- facilities on a regular basis.

A study of the Kennebec Estuary (Moore, S., and J. Reblin. 2010. *The Kennebec Estuary: Restoration Challenges and Opportunities*. Biological Conservation, Bowdoinham, Maine) noted that mercury concentrations in Kennebec Estuary eels from Bowdoinham exceeded the Maine Center for Disease Control & Prevention mercury fish tissue action levels for developmental and adult health as well as the US EPA mercury subsistence consumption screening value. Lobster tomalley, American eel, rainbow smelt, and smallmouth bass from the Kennebec Estuary have each exceeded Polychlorinated Biphenyls (PCB) tissue action levels for reproductive-developmental health and cancer-related risk. In 2006, Maine DEP documented elevated dioxin concentrations in fish and shellfish of the Kennebec Estuary.

On monitoring, the same study found, “The lack of data allowing assessments of current ecological conditions will hinder restoration efforts until consistent funding sources are marshaled to support and in some cases expand programs that have demonstrated benefit. There is also a dire need to initiate new research and monitoring programs that more realistically reflect the complexity of managing natural systems. Currently, accurate assessments of system health and risk to human well-being are hampered by a lack of data that would otherwise characterize lynchpins of ecosystem integrity and resilience such as water quality, dominant plant communities, and toxic contaminant levels.”

The Friends of Merrymeeting Bay monitor invasive species on a volunteer basis. Statewide, most monitoring is done through volunteer groups and associations, as State funding is limited.

(4) A description of the location and nature of significant threats to aquifer drinking water supplies.

According to current State data, no significant aquifers exist in Bowdoinham. A significant aquifer is capable of yielding 10 gallons or more of ground water per minute to a properly installed well.

Groundwater Resources

Precipitation that does not run off as surface water infiltrates the soil. Some may remain near the surface as soil moisture, where it is drawn up by the roots of plants, but much of it continues to percolate downward, becoming groundwater. Depending on underground conditions, recoverable groundwater supplies may be plentiful or scarce in any given location.

Because virtually all of Bowdoinham's drinking water is drawn from groundwater sources, this is a particularly important resource.

Bedrock Groundwater

Groundwater is found in the cracks and fissures of the underlying granite bedrock (ledge). From wells drilled in bedrock there are usually a relatively low yields and sometimes wells must be drilled to depths of several hundred feet to obtain adequate yields for household use. Typically, yields are below 10 gallons per minute (gpm). Occasionally, there are high yield bedrock wells, but these are rare. Nearly all of Bowdoinham's private wells draw groundwater found in bedrock.

Sand and Gravel Aquifers

In Bowdoinham, the only sand and gravel aquifer is located in the Brown's Point area. It has an estimated yield of 10 to 50 gallons per minute, which is suitable for a small public water supply. This aquifer currently provided water for several residents in the area, the irrigation of the agricultural land in the area and the vegetable washing facilities on Pork Point Road.

Sand and gravel aquifers, are highly porous and allow for both storage and release of greater volumes of water through shallower wells that do not need to penetrate bedrock. Groundwater is available in higher yields from sand and gravel deposits that lie below the ground surface, but above the bedrock.

There is another sand and gravel aquifer of significance to Bowdoinham because it is a source of supply for the Bowdoinham Water Company. It is located in Bowdoin. Its yield is listed as 210 gallons per minute or 302,000 gallons per day. – The Public Water System is described in the Public Facilities and Services Chapter.

Threats to Groundwater Quality and Quantity

Because sand and gravel aquifers are porous and transmit water rapidly, they are susceptible to pollution. Once a pollutant enters an aquifer, its movement is governed by the groundwater flow, and it may remain in the aquifer for an indeterminate period. The impact of a pollutant on an aquifer depends on the size and characteristics of the aquifer and on the nature and amount of pollution that is introduced. Sources of aquifer pollution are often located on the ground surface directly above or contiguous to the aquifer. Septic tank effluent, landfill effluent, leakage from ruptured and/or abandoned fuel tanks, uncontrolled hazardous materials sites, road salt, sand-salt storage piles, and agricultural fertilizers and pesticides are all possible sources of aquifer pollution.

Drinking water threats may be particularly acute to those residents with dug wells or well points. East Bowdoinham lies atop a shallow aquifer and as such is particularly prone to water quality threats from the surface.

Gravel mining may expose the water table to direct pollution and may result in increased evaporation.

The town's planning process should carefully assess the availability of groundwater in terms of present and future demands for water; the potential lasting values of groundwater should not be jeopardized by excessive exploitation of their other values.

- (5) *A summary of existing lake, pond, river, stream, and drinking water protection and preservation measures, including local ordinances.*

State and federal laws that protect water resources are summarized below. Enforcement of these laws by State agencies can be limited due to agency staffing levels. Compliance with most State and federal environmental regulations is often left to individual landowners. In many communities, there is greater monitoring and enforcement of State and federal regulations

through the municipal Code Enforcement Officer. Some of the most significant State laws affecting water resources, and other natural resources, include the following:

- Maine Erosion and Sedimentation Control Law – requires basic controls and stabilization when a project involves filling, displacing, or exposing earthen material. No permit is required, but the law sets minimum across-the-board standards that help prevent harm to surface waters.
- Maine Forest Practices Act – requires that landowners notify the Maine Bureau of Forestry of any commercial timber harvesting activities, and that commercial harvest activities meet specific standards for timber harvesting adjacent to water bodies, clearcutting and forest regeneration following the timber harvest. If harvesting activities result in a clear-cut larger than 5 acres, there must be a separation zone between clearcuts, and regeneration standards must be met. This rule requires a harvest management plan developed by a licensed forester for clearcuts greater than 20 acres. The rules prohibit clearcuts greater than 250 acres.
- Maine Natural Resource Protection Act (NRPA) – regulates activities in, on, over or adjacent to natural resources, such as lakes, wetlands, streams, rivers, fragile mountain areas, high and moderate value waterfowl and wading bird habitats, high and moderate value deer wintering areas, significant vernal pools, and sand dune systems. Standards focus on the possible impacts to the resources and to existing uses.
- Maine Plumbing Code – rules pertain to materials, fixtures, vent and waste piping potable water supply piping, and approved subsurface wastewater disposal (septic) systems necessary to protect the public health, safety, and welfare of the citizens of Maine.
- Maine Site Location of Development Law (Site Law) – regulates developments that may have a substantial impact on the environment (i.e., large subdivisions and/or structures, 20-acre-plus developments, and metallic mineral mining operations). Standards address a range of environmental impacts.
- Maine Storm Water Management Law – regulates activities creating impervious or disturbed areas (of size and location) because of their potential impacts to water quality. In effect, this law extends storm water standards to smaller-than Site Location of Development Law–sized projects. It requires quantity standards for storm water to be met in some areas, and both quantity and quality standards to be met in others.

These provisions in the Town of Bowdoinham Land Use Ordinance affect water resources:

- The Water Quality Protection performance standard states, “No activity shall locate, store, discharge, or permit the discharge of any treated, untreated, or inadequately treated liquid, gaseous, or solid materials of such nature, quantity, toxicity, or temperature that run off, seep, percolate, or wash into surface or ground waters so as to contaminate, pollute, or harm such waters or cause nuisances, such as objectionable shore deposits, floating or submerged debris, oil or scum, color, odor, taste, or unsightliness or be harmful to human, animal, plant or aquatic life.”
- Shoreland Zoning provisions provide considerable protection to water bodies and other natural resources located within shoreland areas. Shorelands are environmentally important because of their relationship to water quality, value as critical wildlife habitat and travel corridors, and function as floodplains. Development and/or the removal of vegetation in shoreland areas can increase runoff and sedimentation, as well as the amount of nitrogen and phosphorus entering the water that can lead to algae blooms. Steep slopes with highly erodible soils are particularly susceptible to erosion. Specifically as relates to water quality, the ordinance states, “No activity shall deposit on or into the ground or discharge to the

waters of the State any pollutant that, by itself or in combination with other activities or substances, will impair designated uses or the water classification of the water body, stream or coastal or freshwater wetland.”

- **Site Plan Review** provisions include similar requirements as found in the performance standard shown above. Namely, “No proposed development shall locate, store, discharge, or permit the discharge of any treated, untreated, or inadequately treated liquid, gaseous, or solid materials of such nature, quantity, obnoxiousness, toxicity, or temperature that may run off, seep, percolate, or wash into surface or groundwater so as to contaminate, pollute, or harm such waters or cause nuisances, such as objectionable shore deposits, floating or submerged debris, oil or scum, color, odor, taste, or unsightliness or be harmful to human, animal, plant, or aquatic life.” The site plan review provisions include State requirements for the storage of fuel, chemicals, wastes and raw materials, and State requirements for projects within the direct watershed of a ‘body of water most at risk from development’ or ‘a sensitive or threatened region or watershed’, as identified by Maine DEP. In addition, it is stated, “If the project does not require a stormwater permit from the DEP, it must be designed to minimize the export of phosphorous from the site to the extent reasonable with the proposed use and the characteristics of the site.”
- **Subdivision** provisions on water quality protection note, “The subdivision must not adversely affect the water quality or shoreline of any adjacent water body, to the extent practicable.” In addition, “No subdivision shall increase any contaminant concentration in the ground water to more than one-half of the Primary Drinking Water Standards. No subdivision shall increase any contaminant concentration in the ground water to more than the Secondary Drinking Water Standards.” See the ordinance itself for specific groundwater standards and hydrogeologic assessment requirements.

Analysis

(1) Are there point sources (direct discharges) of pollution in the community? If so, is the community taking steps to eliminate them?

There are four State-identified point sources of pollution from licensed discharges (one wastewater outfall, three overboard discharges). See the map titled Water Resources for their locations.

Licensed Active Wastewater Outfalls and Overboard Discharges in Bowdoinham (Type 14, Wastewater)				
DEP ID	ATS ID	Applicant	Waterbody	Flow GPD
1003	65549	Bowdoinham Community School	Cathance River	7,500
3137	35051	Gaviria (Residential)	Kennebec River	300
3299	66830	Collins (Residential)	Cathance River	720
3837	66041	Lapointe (Residential)	Kennebec River	300

Source: Maine Department of Environmental Protection, 2010

Note: GPD is gallons per day

(2) Are there non-point sources of pollution? If so, is the community taking steps to eliminate them?

Runoff from rain falling on impervious surfaces, like buildings and pavement and to a somewhat lesser extent from agricultural fields, bare ground and residential lawns is defined as non-point source pollution. In such runoff, pollutants occurring naturally like phosphorous, or from petroleum (motor vehicles and storage tanks), fertilizers and pesticides, in addition to untreated or insufficiently treated wastewater and sewage, can be transported into wetlands and water bodies. Impervious surface percentage maximums, as set in shoreland zoning ordinance provisions, can reduce the amount of runoff into water bodies. In especially sensitive areas, resource protection designations limit or prohibit development. Stormwater best management practices are referenced in the Land Use Ordinance. It is believed that shoreland zoning and related provisions are effective overall. Accordingly, it is recommended that monitoring should occur, especially during construction activities, and where water quality is found to be impaired, increased protections should be adopted.

The Town advises homeowners, business owners and farmers, and responds to citizen concerns on an ongoing basis. The Town informs the Maine Department of Environmental Protection of potential violations that could result in increased runoff, for example in shoreland and wetland areas. See the responses below, the Marine Resources Chapter, Public Facilities Chapter and Capital Investment Plan in the Fiscal Capacity Chapter for more information.

(3) How are groundwater and surface water supplies and their recharge areas protected?

The Town believes that public water supplies and their recharge areas are adequately protected overall through the Land Use Ordinance and its shoreland zoning provisions, and through already conserved areas.

The well of the Bowdoinham Water District is located in Bowdoin, and so is subject to protections enacted and enforced in that Town, in addition to State regulations. See the Public Facilities Chapter for more information on the Water District. See the map titled Water Resources for the locations of public water supplies. Outside of the village area served by the Water District, drinking water for residences and businesses comes from individual private wells, the installation of which are subject to State regulation. Surface waters are not generally --- used for drinking water. No significant aquifers exist in Bowdoinham. A significant aquifer is capable of yielding 10 gallons or more of ground water per minute to a properly installed well.

(4) Do public works crews and contractors use best management practices to protect water resources in their daily operations (e.g. salt/sand pile maintenance, culvert replacement street sweeping, public works garage operations)?

Local road construction, repair, and maintenance are done using best management practices to minimize pollution. For example, appropriate seasonal timing of construction is important to avoid excessive amounts of movement of disturbed soil during the high flows of spring. Other techniques may entail temporary mulching of exposed soil surfaces, temporary seeding, and installation of siltation fences, riprap, gravel-filled trenching or the use of siltation basins. Town public works officials are trained in these practices and the Code Enforcement Office investigates the activities of private construction crews and individuals to ensure that they adhere to these practices as well.

(5) Are there opportunities to partner with local or regional advocacy groups that promote water resource protection?

There are opportunities to continue to partner with local and regional organizations that are working to protect water resources through monitoring, education of landowners and those who use these resources, as well as suggesting more effective regulations. The Kennebec Estuary (Kennebec River, Merrymeeting Bay, Cathance River, Abagadasset River, and other tributary streams and brooks in Bowdoinham) is served by these organizations:

- Cathance River Education Alliance (Topsham)
- Friends of Merrymeeting Bay (Richmond-Bowdoinham)
- Friends of the Kennebec River Rail Trail (Brunswick)
- Kennebec Estuary Land Trust (Bath)
- Kennebec River Network (Augusta)
- Maine Rural Water Association (Richmond)

Historic & Archeological Resources

Conditions & Trends

- (1) *The community's Comprehensive Planning Historic Preservation Data Set prepared and provided to the community by the Historic Preservation Commission, and the Office, or their designees.*

See the map titled Known Archaeological Sites and Areas Sensitive for Prehistoric Archaeology in Bowdoinham, prepared by the Maine State Historic Preservation Commission. Highlighted areas show where prehistoric archaeology sites have been found and/or are likely to be found. There are 18 known prehistoric archaeological sites in Bowdoinham. Most of them are located along tidal water or on riverbanks. The Maine State Historic Preservation Commission notes that the banks of the Cathance, Abagadassett, and Kennebec Rivers, and the river floodplain soils in the Bowdoinham Wildlife Management Area are likely locations for prehistoric archaeological sites, and should be surveyed.

The next table lists identified historic sites in Bowdoinham as recorded by the Maine State Historic Preservation Commission.

Know Historic Archaeological Sites in Bowdoinham			
Site Name	Site Number	Site Type	Periods of Significance
Gyles Settlement	ME049-001	settlement	1620 - 1675 (1669 - 1676)
Somerset Settlement	ME049-002	settlement	circa 1719
McCurdie's Point	ME049-003	shipyard	18th and 19th Centuries
<i>Richard</i> (vessel)	ME049-004	wreck, sloop	9/20/1923
Cathance River #1	ME049-005	farmstead	19th Century
Cathance River #2	ME049-006	farmstead	19th Century
Richard Collacott	ME049-007	trading post	1658(?) - 1676
Ebenezer F. Whitney	ME049-008	farmstead	circa 1839 - 1900
Brooks Carding Mill	ME049-009	mill, carding and gristmill	circa 1800 - 1950s
E. Robbins	ME049-010	domestic	1826 - late-1940 - early-1950s
J. Hall Cellar and Cemetery	ME049-011	domestic and cemetery	pre-1828 - post-1936
Unidentified farmstead	ME049-012	farmstead	unknown

Source: Maine State Historic Preservation Commission, September 2011.

No professional town-wide surveys for historic archaeological sites have been conducted to date in Bowdoinham. The Maine State Historic Preservation Commission recommends that future archaeological survey should focus on the identification of potentially significant resources associated with the Town's agricultural, residential, and industrial heritage, particularly those associated with the earliest Euro-American settlement of the Town in the seventeenth and eighteenth centuries.

Five buildings in Bowdoinham are listed on the National Register of Historic Places, as shown in the next table.

Bowdoinham Historic Buildings on the National Register of Historic Places
1. Cornish House, Main Street
2. Robert P. Carr House, Main Street
3. Viola Coombs House, Main Street
4. Harward Family House, Pork Point Road
5. Butterfield-Sampson House, River Road

Source: Maine State Historic Preservation Commission, September 2011

In addition to the above listed properties, a National Register eligible historic district has been tentatively identified in Bowdoinham village, although the exact boundary of that district has not been determined. The Maine State Historic Preservation Commission notes that a comprehensive survey of Bowdoinham's historic aboveground resources needs to be conducted in order to identify other properties that may be eligible for nomination to the National Register of Historic Places.

- (2) *An outline of the community's history, including a brief description of historic settlement patterns and events contributing to the development and character of the community and its surroundings.*

The Town of Bowdoinham was incorporated September 18, 1762, as the 14th Town in the District of Maine. Trappers, fishermen, surveyors, and timber cruisers peopled the area, at least seasonally, as early as 1630.

Permanent settlers arrived in the 1730's, shortly after the end of the Maine Indian wars. The first settlers lived on the fringes of Merrymeeting Bay and its tributary rivers. They were farmers and fishermen first, working to push the woods back. A 1795 map of "old" Bowdoinham offers a handwritten comment from its surveyor/editor: "there are yet no real roads in this town... passage is mostly by water."

Bowdoinham, in those early days before Maine's statehood, included all of present day Richmond (White's Landing) a part of Topsham (Cathance Neck) and a large part of present-day Bowdoin (West Bowdoinham). Since 1823, Bowdoinham's boundaries have remained essentially unchanged, stretching some eight miles along the western shore of Merrymeeting Bay and the Kennebec River, then inland due west nearly five miles.

Today's Bowdoinham Village, or Cathance Landing, was settled about 1800. A toll bridge spanned the Cathance by 1805, and the tidewater landing developed into a bustling center for trade in less than a decade. The landlocked, developing towns of Bowdoin, Litchfield, Webster, Wales, even Lisbon and Lewiston found "the Landing" to be quick and easy access to tidewater, and the sailing vessels that plied the Atlantic coast.

Bowdoinham became one of the earliest shipbuilding centers in a State that became known as a "Ship building State." Vessels of wood were constructed at Bowdoinham a decade before the American Revolution, and during the next 125 years, more than 250 vessels of all class and tonnage were built here.

The decades before the American Civil War brought the town unparalleled prosperity. Warehouses, chandlers, icehouses, mills, stores, and shipyards lined both shores of the Cathance.

Boarding houses, two hotels, several taverns, private estates and more than two dozen shops, businesses and manufacturing operations shared frontage on the Town's steep Main Street with private homes, churches and civic clubs.

In its 1850 census, the Town's population reached 2,382. But the decade following the Civil War triggered an economic decline in Bowdoinham and other parts of the north and east. Many young men went to and were wounded or killed in the war, while many more followed the rivers and railroads south and west when the conflict was done. The Town's only bank was robbed in 1867; more than \$73,000 was taken and never recovered.

Bowdoinham's smaller, wooden ships became obsolete, her yards too small to compete. The town which helped to foster the state's maritime industry had to stand helplessly aside, watching her seamen and master builders move to towns with wider rivers and the ability to build bigger ships. By 1890, Bowdoinham had reverted to what it had been in its earliest days, a small, independent, agricultural-based community of self-sufficient family farms. Residents produced apples, hay, wheat and potatoes, some sheep, poultry and beef, or worked in small shops. They harvested fish and ice from the rivers, and wood from the forests. The Kendall Brothers came to town and their successful fertilizer, sheep and grain business became known across the state.

In 1902, a mid-December fire raged largely unchecked through Bowdoinham's downtown commercial center, destroying almost all of it. Dozens of shops, homes, and warehouses were leveled. Fire struck the downtown area again in 1904, taking out another section of the town's center. Most of Bowdoinham's commerce, and much of her historical village center, were lost in these misfortunes.

After the global depression of the 1930's, Bowdoinham's population sank to a modern low of 904 people.

At the end of World War II, Bowdoinham rode the success of its neighboring towns to make gains of its own. Today, her population has grown steadily to 2,889 residents. Bowdoinham has become a "bedroom town," her industry and fortunes tied to those of her neighbors. Her history, made even more remote by these recent changes, has become all the more precious, even more worthy of preservation.

(3) *An inventory of the location, condition, and use of any historical or archaeological resource that is of local importance.*

In addition to the prehistoric and historic sites noted above by the Maine State Historic Preservation Commission, the Town has at least 48 cemeteries, some public, some private some have financial support, most do not. See the map titled Public Facilities and Services for the public cemetery locations. Additional buildings and structures of local historic importance are shown in the next table.

Historic Buildings and Structures in Bowdoinham of Local Importance that are NOT on the National Register of Historic Places			
Name	Location	Condition	Use
Town Hall	School St	Good	Active
John C. Coombs Municipal Building	School St	Fair	Active
Merrymeeting Grange	Main St	Fair - Structural Work Needed	Active

- (4) *A brief description of threats to local historic resource and to those of state and national significance as identified by the Maine Historic Preservation Commission.*

Development and accompanying excavation and re-grading activities may disturb prehistoric and historic sites and artifacts. Detailed archaeological surveys prioritized for shoreland areas could reduce this risk by informing developers and the planning board where such assets are located. As noted in the Analyses section above, ordinance provisions for site plan review, subdivision and shoreland zoning are meant to protect historic and archeological resources from new development. There are no ordinance standards to protect historic buildings and structures from being altered beyond recognition or razed.

Analysis

- (1) *Are historic patterns of settlement still evident in the community?*

The Bowdoinham village area retains many of its historic buildings: civic, commercial, residential, and religious. The streets converge on the village following in many instances the original road alignments and pathways through the surrounding hillsides, fields and along waterways. The density of development in the village area also continues to reflect early traditional development in which buildings were sited close together on small lots.

- (2) *What protective measures currently exist for historic and archaeological resources and are they effective?*

Most known historic and archeological resources in Bowdoinham are located within shoreland areas. One of the purposes of the shoreland zoning districts is, “to protect archaeological and historic resources.” Shoreland zoning provisions note, “A permit is not required for an archaeological excavation as long as the excavation is conducted by an archaeologist listed on the State Historic Preservation Officer’s level 1 or level 2 approved list, and unreasonable erosion and sedimentation is prevented by means of adequate and timely temporary and permanent stabilization measures.” Shoreland zoning development approval criteria includes, “Will not have an adverse effect on historic and/or archaeological sites.”

The Town believes that its ordinance provisions are effective in protecting historic and archeological resources from new development. However, Bowdoinham does not have design requirements specific to the preservation or historically accurate renovation of historic buildings and structures. Ordinance provisions for site plan regulated development and subdivisions are noted in response to the next question.

- (3) *Do local site plan and/or subdivision regulations require applicants proposing development in areas that may contain historic or archaeological resources to conduct a survey for such resources?*

Archeological or historic surveys are not explicitly defined in the Land Use Ordinance. However, Tier III projects require a site inventory and analysis, which includes identifying the location of, "...historic and/ or archaeological resources, together with a description of such features." Likewise, subdivision inventory and analysis requires identifying, "Locations of all culturally, historically or archaeologically significant buildings, features, or sites." These requirements may be --- waived by the planning board.

Subdivision, site plan review, and general performance standards include historic and archaeological provisions for development on sites identified as containing historic or archaeological resources by the Maine Historic Preservation Commission and require, "appropriate measures for protecting these resources, including but not limited to, modification of the proposed design of the site, timing of construction, and limiting the extent of excavation." Furthermore, subdivisions and proposed developments that have buildings or sites on the National Register of Historic Places or are adjacent to such sites must, "minimize the impacts on the historic features. When the historic features to be protected include buildings, the placement and the architectural design of new structures in the subdivision shall be similar to the historic structures. The Board may require the applicant to seek the advice of the Maine Historic Preservation Commission."

- (4) *Have significant historic resources fallen into disrepair, and are there ways the community can provide incentives to preserve their value as an historical resource?*

Most significant historic resources in Bowdoinham are in adequate to fair condition. The following historic properties are in substandard or blighted condition: Ridge Road Church. Property owners could use historic preservation tax credits (Federal and State) to reduce the costs to redevelop old buildings for new uses while maintaining their historical appeal.

Local efforts to preserve and restore historic resources could be undertaken by town-appointed committees and by volunteer groups. The Bowdoinham Historical Society gathered the largest single collection of records, photographs, and artifacts relating to the town, managed to index at least 48 of the cemeteries that exist in Bowdoinham, and fostered the publication of 14 historical feature newspapers called the Bowdoinham Advertiser. The attention of the Bowdoinham Historical Society to the Town's history coupled with its many social, community-building activities and events make the Society a vital promoter of the Town's future as well as its past.

Recreation

Conditions & Trend

(1) *The community's Comprehensive Planning Recreation Data Set prepared and provided to the community by the Department of Conservation, and the Office, or their designees.*

See the map titled Public Facilities and Services for recreational facilities included in the state-prepared data set and additional facilities as identified by the Town.

(2) *A description of important public and private active recreation programs, land and water recreation areas (including hunting and fishing areas), and facilities in the community and region, including regional recreational opportunities as appropriate, and identification of unmet needs.*

Inventory of Physical Assets

- The Bowdoinham Community School (BCS) was built in 1955, with additions in 1968, 1977, and 1991 /1992. It has an attached auditorium/gymnasium with a small stage. The facility has a poured rubber floor and a regulation-sized basketball court. The School District and the Town have an agreement for access to the building for community use.
- A Little League baseball field, built in 1992, is on school property. Two additional ball fields for baseball and soccer are at the recreation complex. The Town owns the batting cage, a pitching machine, and soccer goals.
- A community playground for small children was constructed behind BCS. The construction was supervised by the Bowdoinham Parent Teacher Club members.
- The outdoor regulation basketball court was built in the summer of 1993. A regulation tennis court was built in 1993. The School is responsible to maintain the basketball court while the town is responsible to maintain the tennis court.
- The outdoor ice-skating rink is situated in the parking area for the ball fields along the Ridge Road. The rink is approximately 30 feet by 100 feet and is weather dependent and maintained by volunteers.
- There is also a nature trail adjacent to the ball fields and a one-kilometer strip mowed on the fields for cross-country running and skiing.
- Volunteers constructed a snack shack and storage building with water and electricity, at the athletic field on Ridge Road in 1999. Two picnic tables were purchased and an electronic scoreboard was installed at the community school for basketball season.
- In 2011 the Army National Guard built a garage in the parking lot of the Recreational facility on Ridge Road. This will replace the green storage shed.
- The Town Hall has undergone extensive renovation during the late 1990's. It may be used for recreational activities and programs.
- The State of Maine manages the Merrymeeting Bay Wildlife Area, located at the tip of Wildes Point Road. Area and State level field dog trials occur here on a regular basis, but the State discourages camping and many other activities often associated with the outdoors.
- The Masons, The Knights of Pythias and The Grange all have buildings in the Village. These social clubs are a recreational asset for their members and are potentially available for community use.

- Bowdoinham has many East-West discontinued roads. The public right of way to these roads has often been retained when the road was discontinued. These provide public access for snowmobiling, hiking, cross-country skiing, and horseback riding. These are not part of an established recreation program but should be identified and maintained for public uses.

Bowdoinham Waterfront Park / Philip Maily Park and Town Landing / Boat Launch

The Bowdoinham Waterfront Park, also known as the Philip Maily Park, is on two acres purchased in 1992 following years of informal town use. Volunteers and the Merrymeeting Yacht Club have assisted maintenance at the Park with the town budget providing the funds for maintenance. Facilities include picnic benches, horseshoe pits, and a fishing area.

The Town Landing, located within Philip Maily Park, is primarily a boat launch jointly owned by the Town and the Department of Conservation. It consists of a boat ramp and two docks, one for handicapped use, where the public may launch and board boats. It is located on the Cathance River, just east of the Route 24 Bridge at the foot of Main Street. This public right of way was completely rebuilt with town and Department of Conservation funds and a federal grant, which provided the assistance of the Navy Seabees. The Waterfront Committee supervised the renovation.

The Landing is a full-tide ramp, so that boats can be launched at any tide. There is a mean low tide of 4 feet, 8 inches at the site. The 13 and 1/2-degree ramp angle makes it easier to launch large boats at any tide.

Down river from the landing are spaces for 44 moorings, 40 for residents and four for non-residents, as required by state law. Twenty-eight are currently used. These moorings are registered with the Town and supervised by a paid Harbormaster, who reports to the Town manager.

Recreation Programs

The Town hired a ½ time Director of recreation in June 1999.

Baseball - This is the largest recreation program in the town, serving approximately 130 players: on average 35 T-ball players (grades K & 1st), 60 Baseball players (2nd grade -6th grade) and 40 softball players (2nd grade-6th grade). The Baseball Program is part of the Ararat Cal Ripken League which includes the towns of Bowdoin, Bowdoinham, Harpswell, Richmond, and Topsham. The Softball Program is part of the Ararat Babe Ruth Softball League which includes the towns of Bowdoin, Bowdoinham, Harpswell, Richmond, and Topsham. Babe Ruth Baseball teams are available for baseball players ages 13-15 for "pool" and "draft" interested players from all the towns in S.A.D. #75. Senior Babe Ruth and American Legion teams are available for players 16-18 years of age.

Basketball - The season begins in November and runs through February. Third and fourth graders have 40 players. Fifth and sixth grades have on average 25 players, usually enough for 1 team of each. These teams are part of the Ararat Youth Basketball League (AYBL) and consists of the towns of Bowdoin, Bowdoinham, Harpswell, Richmond, and Topsham. Some players choose to tryouts for "travel teams" and play in leagues overseen by the AYBL Board. There is

Kindergarten, 1st and 2nd grade basketball program which runs in the winter and is a skills development program.

Ice Skating - The town maintains an outdoor ice skating rink and has ice skates available for residents to rent (at no charge).

Soccer - During the fall soccer season, interested Bowdoinham children participate in the Topsham Recreation soccer leagues. Many children participate in other local club and camp offerings throughout the year.

Skiing - A downhill skiing program is offered beginning in January and running through mid-February. This program takes place at Lost Valley in Auburn and consists of six one-hour sessions (one hour of which is instruction if needed) and a seventh half day session. Transportation from the school to the mountain is part of this package. This program has been in existence for several years and has been attended by as many as thirty children plus a handful of adult chaperones. The town rents out (at no charge) snowshoes and cross-country ski equipment of residents. A 1-km cross-country loop trail has been maintained around the athletic fields.

Tennis - People who play tennis arrive at the courts and play on a first come first serve basis. The tennis court was resurfaced, painted, net reset and a new net installed in the summer of 2011.

Swimming - Lessons are available through the Harpswell Recreation Department with lessons being held at Farley Field House at Bowdoin College. There are two sessions of Sunday free swim for families that live in the SAD #75 towns at Bowdoin College. One Session runs September – December and the other begins in January and runs through April.

Kickball Club - Students in grades 2-5 have the chance to play kickball after school in the fall. There were 30 students who signed up the fall of 2011.

SeaSpray Kayaking - Seaspray Kayaking provides daily instruction for children, going on expedition treasure hunts from the Town Landing in the summer.

Village Seniors - Lunches, socials, bingo and other events are planned on a monthly basis through Bowdoinham Estates and the Town Recreation Department.

Library - The library offers a variety of reading, activity, and workshop programs throughout the year.

Dances - Privately sponsored dances (contra, etc.) are held in the Town Hall. These dances are quite regular and are open to the public for a small fee.

Events

The Town sponsors community events including:

- The Bowdoinham Summer Concert Series is held in Maily Waterfront Park. The free outdoor concerts begin at 6pm and go until at least 8pm every Sunday starting on Late June to Late August. This popular concert series features a wide range of rock, folk, county and acoustic music from local and regional musicians.

- Celebrate Bowdoinham is the Town's annual celebration in September in and around the Waterfront Park.
- Open Farm Day in July gives people a chance to meet their local farmers and tour the local farms.
- Holiday Festival is an opportunity for our local artisans to showcase their goods on the first weekend in December.
- Ice & Smelt Festival is a February event coordinated by the Merrymeeting Arts Center.

Other and non-municipal programs

Other recreation is available through organizations such as Scouts, the Bowdoinham Snowmobile Club (the “Snowbirds”), as well as the Parent Teacher Club, and local churches. While these are not town supported activities, they do provide opportunities for free or inexpensive recreation. Again, volunteers are vital to their success.

With its rural character, rivers, and Merrymeeting Bay, the Town has had many opportunities for these kinds of private recreational activities: Hunting, fishing, walking, boating, bicycling, horseback riding.

Richard Ferrier Scholarship - The Richard Ferrier Scholarship Fund is for students between the ages of 13 and 18 who are residents of Bowdoinham and provides financial assistance so that they may pursue artistic, academic, athletic and vocational or interests outside of the traditional school environment (including but not limited to: music lessons, tuition for summer programs or studies, or special athletic instruction). The Maine Community Foundation administers this fund.

Recreational Businesses

The following recreational businesses are located within Bowdoinham:

- Ackers Acres Disc Golf: disc golf course: 30 holes, 2 courses with 4'x8' cement T-pads a small clubhouse with snacks and drinks available. Host weddings, anniversaries, company parties, etc., 60 acres, open year round, Dingley Rd.
- Dragonworks Kayaks: Manufacture whitewater and sea touring kayaks, accessories, offer tours of Merrymeeting Bay and instruction, Stevens Rd.
- Jim’s Smelt Fishing Camp. Cathance River, 24 camps, Route 24.
- Leighton’s Smelt Fishing Camp Abagadasset River, 10 camps, Brown’s Point Rd.
- Point of View Helicopter Services: Scenic sightseeing of Merrymeeting Bay and region, aerial photography, aerial surveying, wildlife tracking, pipeline patrols and cargo. Stevens Rd.
- River Bend Smelt Fishing Camp. Cathance River. 30 camps, Wallentine Rd.

(3) *An inventory of any fresh or salt water bodies in the community determined locally to have inadequate public access.*

Bowdoinham has miles of frontage on the Kennebec, Cathance, and Abagadasset Rivers and Merrymeeting Bay, but it has no organized swimming areas and only limited points of access.

See the map titled Public Facilities and Services for the location of shorefront access points. There are four “Paddle Put-ins” shorefront access points:

- Maily Waterfront Park (Town Landing) on the Cathance River
- CMP Carry-in (CMP property) on the Lower Abagadasset River
- Gallant Carry-in (State Inland Fisheries and Wildlife property) on the Upper Abagadasset River
- Unnamed off Porkpoint Rd (State agricultural property) on the Kennebec River, below Swan Island

No public access is available to the West Branch of the Cathance within Bowdoinham.

(4) *A description of local and regional trail systems, trail management organizations, and conservation organizations that provide trails for all-terrain vehicles, snowmobiling, skiing, mountain biking, or hiking.*

Local trails

The Bowdoinham Community School has an indoor ~~track~~ and outdoor wading path. The Cathance River Walk (3/4 mile) follows the river on town owned property opposite the Philip Maily Park. The Detweiler/Leyman property on Carding Machine Rd (3/4 mile) has a trail to the Abby.

See the map titled Public Facilities and Services for the location of conserved and town properties with trails. The State of Maine holds two significant parcels that total 485 acres. Reed's Point and the Bachman Property are managed as wildlife preserves and are accessible by trails. On State Inland Fisheries and Wildlife (IFW) property in Bowdoinham (Wildes Rd), the following uses are allowed:

- Snowshoeing, skiing, bird watching
- Hunting (portable tree stands only), fishing, trapping,
- Water access at designated points or at road crossings, carrying in canoes across open land is allowed
- Snowmobiles and ATV's on designated trails only
- Walking on existing trails is allowed but. IFW do not plan to establish any additional trails.

The following are not allowed on State Inland Fisheries and Wildlife (IFW) property in Bowdoinham:

- Camping
- Fires
- Cutting trees or vegetation without written permission
- New trails established or marked without written permission

Regional conservation organizations such as the Friends of Merrymeeting Bay and the Kennebec Estuary Land Trust hold several conservation easements of lands near or adjacent to State properties, connecting habitats and ecosystems. Most of the areas attract recreational visitors. The Cathance River Education Alliance, based in Topsham, promotes ecological awareness and nature-based learning among students, educators and the public in order to foster wise use of the Cathance River Preserve. The Bowdoinham Snowbirds, a snowmobile club, maintain over 50 miles of trails throughout Bowdoinham. For the locations of these trails, see the map titled Bowdoinham Snowbirds and/or the map titled Recreation: Trails. These trails also connect to Bowdoin, Richmond, Litchfield, and Merrymeeting Bay, which link to other trail networks beyond Sagadahoc County.

The Town has published a list of suggested bike routes along public roadways including the Millay Loop (10.4 miles), Richmond Loop (25.1 miles), Ridge Loop, West Loop (6.1 miles), Cathance Loop (11.6 miles), Chicken Run Loop (3 miles), and Kennebec Loop (4 miles).

Proposed Regional Trail

The goal of the proposed Merrymeeting Trail is to use the existing railroad corridor to create a thirty-two mile regional rail-with-trail from Topsham through Bowdoinham and Richmond to Gardiner. The Merrymeeting Trail would connect the following locations:

- Androscoggin River Pedestrian Bike Path in Topsham that links Brunswick to Topsham;
- the village area in Bowdoinham;
- the village area in Richmond;
- the village area in Gardiner; and
- Kennebec River Rail Trail that links Gardiner, Farmingdale, Hallowell, and Augusta.
- East Coast Greenway

Regular meetings on the Merrymeeting Trail Initiative have been held since 2008 to develop the project and grants have been obtained to fund planning. A feasibility study with preliminary engineering and cost estimates was completed in 2011.

Recreational benefits of the trail would include enhanced connections to several major water bodies like Merrymeeting Bay, which is a world-renowned recreational area with significant natural habitat, popular with locals and tourists for sailing, kayaking, swimming, walking, bird watching, fishing and duck hunting. The trail would support healthy communities by providing healthy outdoor activities for area residents. Additionally, it would:

- Serve as an alternate/additional route for the East Coast Greenway (a planned trail system from Canada to Florida)
- Create economic development opportunities and support downtown revitalization
- Allow for future rail use (transportation & shipping) along the corridor, while accommodating safe bicycle and pedestrian routes
- Provide potential cultural/historic education opportunities for communities along the trail
- Provide potential environmental and natural resources education opportunities for local and regional natural resources groups

(5) *A map or list of important publicly-used open spaces and their associated facilities, such as parking and toilet facilities.*

See the map titled Public Facilities and Services for the location of open spaces. See the responses to question #2 above for a description of these recreational facilities.

Analysis

(1) *Will existing recreational facilities and programs in the community and region accommodate projected growth or changes in age groups in your community?*

The natural resources of Bowdoinham and the region provide numerous recreational opportunities like hiking, hunting, horseback riding, ATV, snowmobiling, cross-country skiing,

fishing, canoeing, kayaking, boating, and cycling. Open space includes parks, reserves, certain shoreland areas, athletic fields, farms, forestlands, wetlands, and rivers, as described in this plan. Existing recreational facilities in general meet the projected needs of the community over the next ten years. Allocating sufficient resources for the ongoing maintenance of all facilities will be crucial. An increase in the number and frequency of programs to meet the growing elderly population might be warranted.

- (2) *Is there a need for certain types of services or facilities or to upgrade or enlarge present facilities to either add capacity or make them more usable?*

The need for a permanent home for the Senior Center, expanded senior activities and a community center have been discussed.

- (3) *Are important tracts of open space commonly used for recreation publicly-owned or otherwise permanently conserved?*

Several important open spaces used for recreation are conserved. See the Condition and Trends section in this chapter for a listing of town-owned and permanently conserved lands and facilities, and see the map titled Public Facilities and Services.

- (4) *Does the community have a mechanism, such as an open space fund or partnership with a land trust, to acquire important open spaces and access sites, either outright or through conservation easements?*

The Town has worked with area land trusts on the preservation of open spaces and access. The adoption of a formal municipal policy and mechanism might prove beneficial.

The Town does not have a dedicated open space fund to receive donations from private sources and from government grants to support the acquisition of open spaces for recreation, conservation, forestry or agricultural uses.

- (5) *Does the public have access to each of the community's significant water bodies?*

There is public access to the major water bodies in Bowdoinham. However, as noted below, these points are limited.

- (6) *Are recreational trails in the community adequately maintained? Are there use conflicts on these trails?*

Yes, the current trails are adequately maintained and no conflicts have been identified.

- (7) *Is traditional access to private lands being restricted?*

A few property owners post their land to restrict hunting, for privacy, to reduce illegal dumping, or for other reasons.

Housing

Conditions & Trend

(1) *The community's Comprehensive Planning Housing Data Set prepared and provided to the community by the Maine State Housing Authority, and the Office, or their designees.*

The increase in the number of housing units has occurred at a faster rate than the growth in population in Bowdoinham over the past thirty years. Population grew by 31.8% from 1990 to 2010, while housing grew by 44.7%. This is due principally to the decrease in average household size. There has been a significant increase in seasonal housing in percentage terms, but such housing still comprises a very small proportion of total housing in absolute terms, just 42 units or 3.3% of the total housing stock. The vacancy rate was 7.5% in 1990 and 7.8% in 2010. Of that, 1.7% of housing was for sale in 1990 and 0.9% in 2010, indicating high demand and/or a limited supply of housing locally.

Housing Units in Bowdoinham					
Units by Tenure	1990	2000	2010	Change	Percent Change
Total Units	884	1,107	1,279	395	44.7%
Occupied	818	1,027	1,179	361	44.1%
Vacant	66	80	100	34	51.5%
- Vacant, for rent	4	6	9	5	125.0%
- Vacant, for sale only	15	10	11	-4	-26.7%
- Vacant, rented or sold, - not occupied	2	8	7	5	250.0%
- For seasonal, recreational, - occasional use	4	34	42	38	950.0%
- All other vacant	41	22	31	-10	-24.4%

Source: Census

The increase in the number of housing units has occurred at a faster rate than the growth in population for Sagadahoc County over the past thirty years. Population grew by 5.2% from 1990 to 2010 countywide, while housing grew by 25%. Growth in seasonal housing has been especially strong and now comprises 10% of the County's total housing stock, up from 8.8% in 1990. The County vacancy rate was 14% in 1990 and 17.5% in 2010. Of that, 0.9% of housing was for sale in 1990 and 1.5% in 2010. As a coastal county, Sagadahoc has more seasonal housing proportionally than does the Town.

Housing Units in Sagadahoc County					
Units by Tenure	1990	2000	2010	Change	Percent Change
Total Units	14,633	16,489	18,288	3,655	25.0%
Occupied	12,581	14,117	15,088	2,507	19.9%
Vacant	2,052	2,372	3,200	1,148	55.9%
- Vacant, for rent	273	250	478	205	75.1%

- Vacant, for sale only	129	107	275	146	113.2%
- Vacant, rented or sold, - not occupied	50	102	110	60	120.0%
- For seasonal, recreational, - occasional use	1,293	1,683	1,829	536	41.5%
- All other vacant	307	230	508	201	65.5%

Source: Census

About 80.4% of the Town's housing is comprised of single-units (single-family: attached and detached). In comparison, the County's housing stock is 75.9% single-family units, while the State's is 71.6%. Bowdoinham has a lower percentage of multi-unit housing (1%) than does the County (14.5%) or State (19.3%) At 18.6%, the Town had almost twice the percentage of mobile homes as a proportion of its total housing than did the County (9.5%) and more than twice the State (9%). Over the past twenty years most of the Town's growth in housing has been in single-family units. In 1990, about 72% of the Town's housing stock was single-family units, 6% multifamily, and 22% mobile homes.

Estimate of Units by Structure Type 2006-2010						
Category	Bowdoinham		Sagadahoc County		Maine	
	Number	Percent	Number	Percent	Number	Percent
Total Est. Units	1,198	100.0%	18,115	100.0%	714,270	100.0%
1, detached	955	79.7%	12,872	71.1%	495,685	69.4%
1, attached	8	0.7%	875	4.8%	15,621	2.2%
2	2	0.2%	651	3.6%	37,570	5.3%
3 or 4	0	0.0%	951	5.2%	39,360	5.5%
5 to 9	0	0.0%	550	3.0%	29,477	4.1%
10 to 19	0	0.0%	234	1.3%	12,274	1.7%
20 to 49	10	0.8%	191	1.1%	10,985	1.5%
50 or more	0	0.0%	60	0.3%	8,914	1.2%
Mobile home	223	18.6%	1,721	9.5%	64,221	9.0%
Boat, RV, van, etc.	0	0.0%	10	0.1%	163	0.0%

Source: Census, American Community Survey

Note: The total "estimate of units by structure type" does not equal the total number of units as recorded by the Census in 2010.

Two complexes of housing for elderly and low income were built in the late 1980's and early 1990's. Bowdoinham Estates on Preble Street, off 125 close to the I-95 interchange, is an apartment complex for elderly over 62 or handicapped over 18. There are 25 units: one bedroom rents for \$577, 2 bedrooms for \$721 in 2011.

Greenleaf Apartments, also on Preble Street, is a complex of 21 attached units in groups of 2-4 each. The rent is set at 30% of income, affordable rate for all ages.

During the past decade, all of Bowdoinham's housing permits were for single-family homes. No multi-family unit permits were issued. Permit activity was stronger in the middle of the decade, before the housing market decline. Bowdoinham had about 8.6% of the permits issued in Sagadahoc County, while having about 8.2% of the County's population.

Bowdoinham Housing Unit Building Permits Issued													
Housing Type	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Sum	Yearly Avg
Units in Single-Family Structures	15	16	18	19	18	18	17	14	7	10	10	162	14.7
Units in All Multi-Family Structures	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Units	15	16	18	19	18	18	17	14	7	10	10	162	14.7

Source: US Department of Housing and Urban Development

Like Bowdoinham, there was more building permit activity countywide in the middle of the decade than at the beginning or the end. At the County level, about 3.1% of all permits were for multi-family structures.

Sagadahoc County Housing Unit Building Permits Issued													
Housing Type	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Sum	Yearly Avg
Units in Single-Family Structures	157	147	186	223	233	242	211	150	66	106	102	1,823	165.7
Units in All Multi-Family Structures	0	12	4	8	4	15	16	0	0	0	0	59	5.4
Total Units	157	159	190	231	237	257	227	150	66	106	102	1,882	171.1

Source: US Department of Housing and Urban Development

About 88.5% of occupied housing in Bowdoinham was owner occupied in 2004, as compared with 76.5% in Sagadahoc County and 73.1% for the state. As a portion of total occupied housing, there is less renter occupied housing at the local level than at the County level or statewide. About 20.7% of owner occupied housing in Bowdoinham was built before 1939. For the County that figure was 24.9% and for the State that figure was 24.5%. Bowdoinham has a relatively younger housing stock than does the County or state. Substandard housing is more common with older units.

Estimate of Housing Units by Age and Tenure, 2004			
Age of Housing Unit	Bowdoinham	Sagadahoc County	Maine
Total Occupied	1,126	14,721	551,125
Owner occupied Total	996	11,262	402,907
Built 2000 to 2004	150	1,024	29,036
Built 1990 to 1999	152	1,695	57,429
Built 1980 to 1989	289	1,963	64,584
Built 1970 to 1979	82	1,541	59,968
Built 1960 to 1969	56	753	29,963
Built 1950 to 1959	37	517	30,388
Built 1940 to 1949	6	467	19,509
Built 1939 or earlier	206	2,803	98,764
Renter occupied Total	130	3,459	148,218
Built 2000 to 2004	14	150	6,026
Built 1990 to 1999	6	382	12,633
Built 1980 to 1989	40	428	19,858
Built 1970 to 1979	53	528	22,752
Built 1960 to 1969	0	356	10,958
Built 1950 to 1959	5	267	11,226
Built 1940 to 1949	0	308	8,172
Built 1939 or earlier	12	1,002	53,218

Source: Census, American Community Survey

For Bowdoinham, an estimated 1.6% of housing units lacked complete kitchens and 2.3% lacked complete plumbing. The Code Enforcement Officer believes that --- most of these units were seasonal housing. For the County, those units lacking complete kitchens were 0.9% and those lacking complete plumbing were 0.8%. For the State, both those figures were about 0.9%.

Estimate of Kitchen and Plumbing in Housing Units, 2004			
Category	Bowdoinham	Sagadahoc County	Maine
Complete kitchen facilities	1,108	14,588	546,235
Lacking complete kitchen facilities	18	133	4,890
Complete plumbing facilities	1,100	14,605	546,210
Lacking complete plumbing	26	116	4,915

Source: Census, American Community Survey

Government subsidized housing units are shown in the next table. Figures for the number of units for disabled persons were not available at the Town or County level.

Estimate of Subsidized Housing Units, 2004			
Category	Bowdoinham	Sagadahoc County	Maine
Disabled Units	NA	NA	460
Family Units	27	391	11,517
Housing Choice Vouchers	24	391	11,369
Senior Units	25	323	14,073
Special Needs Units	6	123	1,846
Total	82	1,228	39,265

Source: Census, American Community Survey

In 2010, the median income earner in Bowdoinham could afford about 83% of the median home sale price in the Town. That is somewhat better than the 2006 figure of 81%. Overall, incomes have risen (in part, because some newer Bowdoinham residents have higher incomes than those who have left the community). Home sale prices have risen only slightly. The next table also shows the income needed to afford recent home sale prices, and home prices that are affordable for recent income figures. Home sale prices are for units sold through the multiple-listing service. These sales do not include homes and lands sold directly by the owner without the use of a real estate agent, which tend to fetch lower prices and are often sold or given to relatives.

Housing Affordability in Bowdoinham					
Year	Affordability Index	Median Home Sale Price	Median Income	Income Needed to afford Home Price	Home Price Affordable to Median Income
2006	0.81	\$202,000	\$53,182	\$65,890	\$163,042
2007	0.79	\$211,750	\$54,511	\$69,070	\$167,116
2008	0.95	\$180,000	\$55,565	\$58,714	\$170,347
2009	0.95	\$174,500	\$57,064	\$60,347	\$165,006
2010	0.83	\$205,000	\$58,838	\$70,895	\$170,136

Source: Maine State Housing Authority

Note: The affordability index is the ratio of Home Price Affordable at Median Income to Median Home Price. An index of less than 1 means the area is generally unaffordable – i.e., a household earning area median income could not cover the payment on a median priced home (30 year mortgage, taxes and insurance) using no more than 28% of gross income.

Despite lower median incomes, housing is slightly more affordable in the larger Brunswick Micropolitan Housing Area, at the County level, and at the State level than it is in Bowdoinham. This is due to a greater variety of housing stock found outside of the Town, including more multi-family housing units, which are often less expensive than single-family detached housing units.

Housing Affordability in 2010					
Area	Affordability Index	Median Income	Median Home Sale Price	Income Needed to afford Home Price	Home Price Affordable to Median Income
Brunswick Micropolitan Housing Area/LMA	0.85	\$52,594	\$184,250	\$61,712	\$157,028
Sagadahoc County	0.97	\$54,950	\$170,000	\$56,791	\$164,492
Maine	0.88	\$48,405	\$165,000	\$55,282	\$144,474

Source: Maine State Housing Authority

Notes: The affordability index is the ratio of Home Price Affordable at Median Income to Median Home Price. An index of less than 1 means the area is generally unaffordable – i.e., a household earning area median income could not cover the payment on a median priced home (30 year mortgage, taxes and insurance) using no more than 28% of gross income. The Brunswick LMA includes Brunswick, Harpswell, Dresden, Westport, Wiscasset, Arrowsic, Bath, Bowdoin, Bowdoinham, Georgetown, Perkins UT, Phippsburg, Richmond, Topsham, West Bath, and Woolwich.

Most households could not afford to buy a housing unit at the current sale prices in their community.

Households Unable to Afford Median Home Sale Price in 2010			
Area	Percent of Households that can't afford	Number of Households that can't afford	Total Households
Bowdoinham	64.70%	728	1,125
Brunswick Micropolitan Housing Market/LMA	58.00%	16,601	28,622
Sagadahoc County	51.80%	7,792	15,040
Maine	57.50%	318,038	553,267

Source: Maine State Housing Authority

Due to the limited number of rental units in Bowdoinham, local data is not available on affordability from the Maine State Housing Authority. At the County level, slightly less than half of all renters could not afford an average two-bedroom unit. That figure is about half of all renters for the Brunswick Micropolitan Housing Market and for the State, suggesting the likelihood of overcrowding by low income families in smaller apartments.

Renter Households That Can't Afford the Average 2-Bedroom Rent			
Area	Percent of Households Unable to Afford Avg. 2BR Rent	Number of Households Unable to Afford Avg 2BR Rent	Average 2 BR Rent (with Utilities)
Sagadahoc County	48.30%	1,785	\$874
Brunswick Micropolitan Housing Market/LMA	50.20%	3,777	\$885
Maine	53.70%	81,696	\$826

Source: Maine State Housing Authority

Note: Bowdoinham rental figures are not available.

From 2006 to 2010, seven families participated in the First Time Home Program in Bowdoinham receiving financial assistance from the Maine State Housing Authority.

Maine Housing First Home Program Participation in Bowdoinham						
Number of	2006	2007	2008	2009	2010	Totals
Families	2	0	3	2	0	7
Housing Units	2	0	3	2	0	7

Source: Maine State Housing Authority

In Bowdoinham, about 14.5% of homeowner households earned more than 50% but less than 80% of the Household Area Median Income in 2009. About 7.3% of Bowdoinham homeowners earned less than 30% to 50% of the Area Median Income, and 12% earned 30% or less of the Area Median Income. In comparison, in the Brunswick Labor Market Area, 15.4% of homeowner households earned more than 50% but less than 80% of the Household Area Median Income. About 8.6% earned less than 30% to 50% of the Area Median Income, and 6.7% earned 30% or less of the Area Median Income. For the County as a whole, those figures were 15%, 8.3% and 7.1% respectively.

Homeowner Households by Income in 2009						
Area	Total Homeowner Households	Homeowner Households >50% to 80% AMI	Homeowner Households >30% to 50% AMI	Homeowner Householders 30% AMI or Less	Average Household Size	Median Head of Household Age
Bowdoinham	945	137	69	113	2.44	52.9
Brunswick LMA	20,572	3,164	1,768	1,369	2.34	54.6
Sagadahoc County	10,909	1,641	902	770	2.39	53.8

Source: Maine State Housing Authority

Note: The AMI is the Household Area Median Income.

Due to the limited number of rental units in Bowdoinham, data from the Maine State Housing Authority is not available on renter income at the Town level. For the Brunswick Labor Market Area, 22% of renter households earned more than 50% but less than 80% of the Household Area Median Income. About 16.2% earned less than 30% to 50% of the Area Median Income, and 21% earned 30% or less of the Area Median Income. For the County as a whole, those figures were 23.3%, 16.7% and 20.9% respectively.

Renter Households by Income in 2009						
Area	Total Renter Households	Renter Households >50% to 80% AMI	Renter Households >30% to 50% AMI	Renter Householders 30% AMI or Less	Average Household Size	Median Head of Household Age
Brunswick LMA	8,175	1,802	1,321	1,713	2.34	42.7
Sagadahoc County	4,171	971	695	870	2.39	42.3

Source: Maine State Housing Authority

Notes: The AMI is the Household Area Median Income. Bowdoinham rental figures are not available.

(2) *Information on existing local and regional affordable/workforce housing coalitions or similar efforts.*

Bowdoinham does not have any ongoing local housing coalitions and affordable housing efforts.

The Maine Affordable Housing Coalition based in Portland is a diverse coalition of more than 70 private and public sector organizations, including developers, architects, engineers, builders, investors, Community Action agencies, public housing authorities, housing and service providers, advocates and others committed to ensuring that all Mainers are adequately and affordably housed. The group was formed initially as the Southern Maine Affordable Rental Housing Coalition in 2000, but since that time, has extended its membership and activities to other areas of the State including Sagadahoc County.

The United Way of Mid-Coast Maine based in Bath has participated in affordable housing efforts, hosting forums and providing housing assistance (for example, administering the Emergency Home Heating Assistance and Emergency Food and Shelter Program) in the region.

The Greater Brunswick Housing Corporation was created in 1998 to increase the supply of affordable housing in the region. The specific purposes of the corporation are to own, lease, organize, develop, construct, financially assist, manage and operate, on a non-profit basis, projects or programs providing low- income rentals or homeownership opportunities to elderly, handicapped and/or families.

The Bath Housing Authority is a non-profit agency concerned with providing Bath area residents with safe, attractive, efficient, and affordable housing in the City of Bath.

(3) A summary of local regulations that affect the development of affordable/workforce housing.

One- and two-family residential units are allowed town-wide excluding the Commercial Fisheries and Maritime District. Multi-unit residential is allowed in most of Bowdoinham (General District: Residential/Agricultural District, all areas outside of the shoreland zoning districts, and in the Limited Residential and Limited Commercial shoreland zoning districts).

As noted in the Analyses section above, town-wide outside of the shoreland zoning districts, the minimum lot size is one acre and the maximum residential density is one unit per acre for development on individual lots and one acre, net residential density, in subdivisions. The one-acre standard was set due to the lack of sewer in Bowdoinham, which inhibits the development of multi-unit housing.

Affordable housing tends to be located on lots smaller than one acre, and/or as part of multi-unit development with connections to sewer or community wastewater systems. The Land Use Ordinance does not allow for higher density for housing units that would be connected to sewer, should it become available, or to community wastewater systems, or for units designated as affordable based upon State or federal criteria. However, manufactured housing (mobile homes and mobile home parks) are allowed town-wide excluding certain shoreland districts. As noted above, Bowdoinham has a relatively low proportion of multi-units and a high proportion of mobile homes as compared to the County and State.

Analysis

(1) How many additional housing units (if any), including rental units, will be necessary to accommodate projected population and demographic changes during the planning period?

Based upon observed trends, the 2024 population of the Town is forecast to total a maximum of 3,300 persons. See the Population Chapter for more information. At the current average household size of 2.45 persons, that would require about 1,347 housing units by 2024. However, the number of persons within households has been decreasing steadily on average. If that trend continues, the average household size in 2024 for Bowdoinham may be 2.37 persons, supporting a total housing need of 1,393 units or 114 more housing units than the Town had in 2010. Given the actual amount of housing growth seen from 2000 to 2010 (172 units), it is very likely that the figure of 114 additional units will be built over the next planning period. For planning purposes, the 2024 housing unit count is forecast to reach 1,393 units in total.

At the current minimum lot size and maximum housing density, the forecasted new additional housing would require 114 acres of buildable lots. If this housing were part of new subdivisions, the land for new roadways could total up to 17 acres through traditional subdivisions, or 8 acres with cluster/conservation subdivisions. Rental housing in the form of multi-family units has comprised very little of the Town housing stock. Without sewer or community wastewater systems, multi-unit housing is unlikely to increase significantly.

(2) Is housing, including rental housing, affordable to those earning the median income in the region? Is housing affordable to those earning 80% of the median income? If not, review local and regional efforts to address issue.

In 2010, the median income household in Bowdoinham (\$58,838) could afford about 83% (\$170,136) of the median home sale price in the Town (\$205,000). The affordability figure was slightly better for the Brunswick Labor Market Area (85%) and notably better for Sagadahoc County (97%). Of course, for those earning less than the median income, housing is even less affordable. About 319 Bowdoinham homeowner households earned 80% or less of the median income, as estimated in 2009. Rental household figures were not available at the Town level. Housing affordability, as based upon the standard definition of not spending more than 28% of one's income on housing, concerns middle and low-income earners in Bowdoinham as it does residents statewide.

Mobile homes comprise about 18.6% of Bowdoinham's housing stock and provide the majority of affordable housing, as there are few multi-units in the Town. The Land Use Ordinance allows mobile homes in most parts of the community, with the exception of certain shoreland zoning districts.

Since 2000, the Town has not facilitated any affordable housing. See the Conditions and Trends section for a description of regional affordable housing efforts.

- (3) *Are seasonal homes being converted to year-round use or vice-versa? What impact does this have on the community?*

Bowdoinham has few seasonal units (42 in 2010). The Code Enforcement Office reports that since 2000 there have been few conversions of seasonal units to year-round. While the Town does not actively monitor occupancy, there has been no appreciable impact on the community from conversions.

- (4) *Will additional low and moderate income family, senior, or assisted living housing be necessary to meet projected needs for the community? Will these needs be met locally or regionally?*

As noted in the Population Chapter, much of the forecasted population increase in Bowdoinham will be in the older age groups. The demand for housing to accommodate the needs of the elderly will increase. Expansion of existing subsidized facilities (Bowdoinham Estates and Greenleaf Apartments) in Bowdoinham for low-income persons and the elderly, or the construction of new similar facilities including assisted living would be needed to meet future local demand. A wider variety of elderly housing options are found nearby in the larger communities of Bath and Brunswick, which benefit from a range of complementary services and medical facilities that Bowdoinham lacks. It is likely that service center communities will continue to provide the majority of subsidized units, with a smaller, but growing portion provided locally.

- (5) *Are there other major housing issues in the community, such as substandard housing?*

For Bowdoinham, an estimated 1.6% of housing units lacked complete kitchens and 2.3% lacked complete plumbing in 2004.

- (6) *How do existing local regulations encourage or discourage the development of affordable/workforce housing?*

Affordable housing tends to be located on lots smaller than one acre, and/or as part of multi-unit development with connections to sewer or community wastewater systems. Town-wide outside

of the shoreland zoning districts, however, the current minimum lot size is one acre and the maximum residential density is one unit per acre for development on individual lots and one acre, net residential density, in subdivisions. These standards reflect the lack of sewer in Bowdoinham, which inhibits the development of homes on small lots and multi-unit housing.

The Land Use Ordinance does not provide for higher density for housing units that would be connected to sewer, if sewer were to become available, or to community wastewater systems, or for units designated as affordable based upon State or federal criteria. However, manufactured housing (mobile homes and mobile home parks) are allowed town-wide excluding certain shoreland districts. Most of the affordable housing in Bowdoinham is in the form of mobile homes.

Transportation

Conditions & Trend

- (1) *The community's Comprehensive Planning Transportation Data Set prepared and provided to the community by the Department of Transportation, and the Office, or their designees.*

Note: This data set has been incorporated and updated in the Transportation Network map and in the Analyses section of this chapter, as well as in the items that follow in this section.

See the map titled Transportation Network for factored annual average daily traffic volumes at key points on roadways in 2010. Maine DOT estimated these figures, which are based upon actual traffic counts. I-295 had the highest estimated volume 12,620 (southbound) and 12,610 (northbound) south of the Route 125 entrance and exit ramps. Route 24 had an estimated 1,730 vehicles daily near the Topsham town line, while Main St had an estimated 1,920 vehicles daily, west of the School St intersection, and 2,040 vehicles east of the Center St intersection.

The next table shows traffic volumes as recorded by Maine DOT for select roadways within Bowdoinham.

Annual Average Daily Traffic Counts						
Location	1980	1990	2000	2007	2009	2010
I-295 (NB) N/O Off Ramp To SR 125/138	3,334	7,800	9,840		10,940	11,340
I-295 (NB) S/O Off Ramp To SR 125/138	3,492	8,270	11,840		12,100	12,610
I-295 (SB) S/O Off Ramp To SR 125/138		7,810	10,340		11,340	11,360
I-295 (SB) S/O On Ramp From SR 125/138		8,320	12,180		12,400	12,620
Browns Pt Rd E/O SR 24 (S JCT)	342		660	500		
Pork Point Rd S/O SR 24 (N JCT)	135		130			
Ridge Rd NE/O Cemetery Rd	293			400		
White Rd N/O SR 24 (River Rd)	343		700	700		
Center St SE/O SR 138 (Post Rd)				720		
Millay Rd NW/O SR 138 (Post Rd)	185		380	460		
Fisher Rd SW/O SR 125 (Main St)	385		660	750		
S Pleasant St NW/O SR 24 (River Rd)	160			210		
SR 125 (Main St) NW/O SR 24 (River Rd)				2,150		
SR 125 (Main St) SE/O SR 138 (Post Rd)	1,072		2,120	2,010		
SR 125 (Pond Rd) N/O SR 138	420			1,870		1,770
SR 125/138 (Main St) E/O I-95 Ramps	1,283			3,370		
SR 125/138 (Main St) E/O SR 125 (Pond Rd)	851			2,780		2,590
SR 138 (Post Rd) NE/O Millay Rd	420	660	1,050	910		
SR 138 (Post Rd) NE/O SR 125 (Main St)				1,240		
SR 138 W/O SR 125	422					
SR 24 (River Rd) at Richmond town line		590	730	750		
SR 24 (River Rd) E/O SR 125 (Main St)	1,393		3,400	2,740		
SR 24 (River Rd) SW/O SR 125 (Main St)				1,660		
SR 24 (River) SW/O S Pleasant St	477	720	840	730		

Annual Average Daily Traffic Counts						
Location	1980	1990	2000	2007	2009	2010
SR 24 NE/O Browns Pt Rd (S JCT)	834	1,160	1,950			
SR 24 NE/O Pork Point Rd (N JCT)	440		920	810		
SR 24 SW/O Pork Point Rd (N JCT)	400		850	760		
SR 24(River Rd) NW/O Wallentine Rd	941		2,040			
SR 24 (River Rd) S/O Wallentine Rd		1,630		1,660		
SR 24 (River) SW/O Browns Pt Rd (S JCT)	1,152		2,540	2,170		

Source: Maine DOT

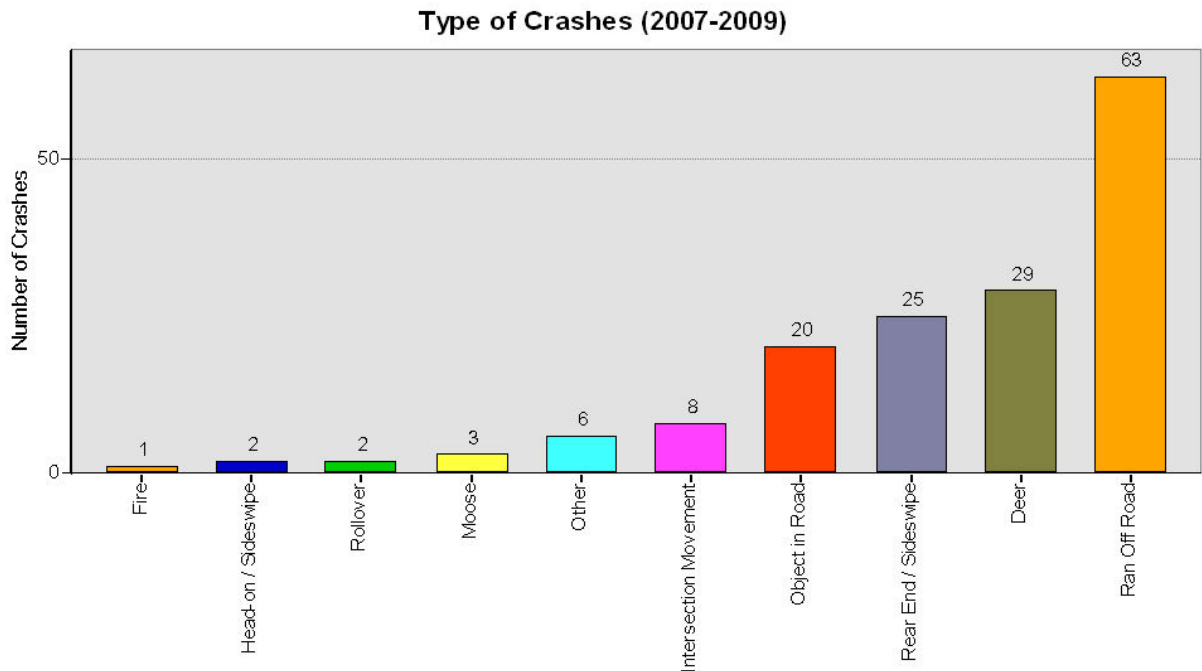
Note: SR = State Route, NE/O = northeast of, NW/O = northwest of, and so forth.

Level of service (LOS) is a measure of congestion shown on the map titled Transportation Network. Most roadways in Bowdoinham are LOS A. Portions of Routes 24, 125, 138, 201 and I-295 are LOS B. These ratings indicate that roadways within Bowdoinham have not reached their maximum capacities and that delays in which the travel speed is lower than the posted speed are infrequent. LOS D is usually considered an indication of the maximum acceptable volume/capacity if current posted speeds and travel lane configurations are to be maintained.

Maine DOT records high crash locations where eight or more crashes have been reported within a three-year period in Bowdoinham along the segment of Route 24 from the Topsham town line north to the intersection of Merrymeeting Way. See the map titled Transportation Network.

Most crashes in Bowdoinham were the result of vehicles running off the road. See the bar graph below. Other principal causes included crashes with deer, sideswipes with other vehicles and with objects in the road.

Bowdoinham Vehicular Crash Causes



Source: Maine DOT

The majority of Bowdoinham residents who commute to work drive alone. About 11.6% carpooled and 1.7% walked. For the county, those figures were 10% and 3.3% respectively.

Transportation - Means of Travel to Work, 2009			
Method	Bowdoinham	Sagadahoc County	Maine
Total	1,504	19,184	640,849
Car, truck, or van – Drove alone	1,238	15,501	502,055
Car, truck, or van – Carpooled	175	1,919	66,511
Public transportation	0	108	5,313
Motorcycle	0	21	1,024
Bicycle	0	51	2,734
Walked	26	626	26,132
Other means	13	106	5,025
Worked at home	52	852	32,055

Source: Census, American Community Survey

About 58% of Bowdoinham residents who commuted took on average 20-34 minutes to travel (one-way). For the county, 34.1% took that same amount of time, while 30.5% did statewide.

Transportation - Travel Time to Work, 2009			
Travel Time	Bowdoinham	Sagadahoc County	Maine
Workers over 16 who did not work at home	1,452	18,332	608,794
Less than 5 minutes	61	768	38,946
5 to 9 minutes	56	2,408	85,611
10 to 14 minutes	83	2,747	95,322
15 to 19 minutes	142	2,920	91,099
20 to 24 minutes	350	2,769	82,757
25 to 29 minutes	224	1,206	35,148
30 to 34 minutes	268	2,285	67,525
35 to 39 minutes	27	552	15,005
40 to 44 minutes	119	917	20,995
45 to 59 minutes	82	1,154	40,168
60 to 89 minutes	28	474	23,332
90 or more minutes	12	132	12,886

Source: Census, American Community Survey

- (2) *Location and overall condition of roads, bridges, sidewalks, and bicycle facilities, including any identified deficiencies or concerns.*

The Transportation Network map shows the locations of roads and bridges. According to Maine DOT, Bowdoinham has 60.78 miles of public roads, of which 7.39 miles are interstate (I-295), 7.74 miles are State highway, 15.79 miles are State Aid highway, and 29.86 miles are Town roads.

Public roads are vitally important as they allow residents to commute to work, school, stores, and around Bowdoinham. The overall condition (poor, fair, or good) of each roadway as judged by the Town is noted in the next table.

Bowdoinham PUBLIC Roadway Inventory				
Roadway Name	Owner	Length (miles)	Surface	Overall Condition
Abagadasset Rd	Town	1	paved	fair
Backhill Rd	Town	.10	paved	fair
Batchelder Dr	Town	.14	gravel	fair
Blanchard Rd	Town	.60	gravel	fair
Browns Point Rd	Town	2.63	paved/gravel	good
Carding Machine Rd	Town	3.81	paved/gravel	fair
Carlson Cross	Town	.33	gravel	good
Cemetery St	Town	.39	paved	good
Center St	Town	.40	paved	good
Center's Point Rd	Town	.76	gravel	fair

Bowdoinham PUBLIC Roadway Inventory				
Roadway Name	Owner	Length (miles)	Surface	Overall Condition
Church St	Town	.05	paved	fair
Curtis Farm Rd	Town	.10	gravel	good
Dingley Rd	Town	1.44	gravel	good
Dinsmore Cross Rd	Town	.30	paved	good
Fisher Rd	Town	1.82	paved	fair
Hornbeck Cross Rd	Town	.15	gravel	fair
I-295	State	7.39	paved	good
Lucas Ln	Town	.12	paved	good
Main St Ext	Town	.10	paved	fair
Mallard Ln	Town	.10	gravel	fair
Millay Rd	Town	3.00	paved	good
Pioneer Rd	Town	.10	gravel	fair
Pork Point Rd	Town	2.32	paved	poor
Pratt Rd	Town	.78	gravel	fair
Preble Rd	Town	.40	paved	fair
Ridge Rd	Town	5.94	paved	fair
State Route 125 – Pond Rd portion	State	.71	paved	good
State Route 125- Main St portion	State	1.4	paved	good
State Route 138 – Post Rd portion	State	7.9	paved	poor
State Route 24 – Bay Rd portion	State	2.5	paved	poor
State Route 24 – River Rd portion	State	7.9	paved	poor
S Pleasant St	Town	.76	paved	good
School St	Town	.10	paved	good
Spear Dr	Town	.18	paved	fair
Spring St	Town	.10	paved	good
Stevens Rd	Town	.15	gravel	fair
U.S. Route 201 – Augusta Rd/ Brunswick Rd	State		paved	good
Vine St	Town	.07	gravel	fair
Wallentine Rd	Town	.38	gravel	fair
White Rd	State	3.98	paved	fair
Wildes Rd	Town	.82	paved	poor

Sources: Maine DOT and Town

Note: These road names may differ from local sources.

Bridge locations are shown on the Transportation Network map. The next table shows bridge ownership, length, year built, most recent inspection date and federal sufficiency rating (overall condition) as assessed by Maine DOT. The Abagadasset Bridge, located on Route 24 was identified for improvement in 2014-2015.

Bowdoinham Bridge Inventory							
Bridge Name	Location	Owner	Year Built	MDOT ID #	Length (feet)	Inspection Date	Sufficiency Rating
Abagadasset	Route 24	State	1936	5493	75	7/29/2009	51.6
Brooklyn	Route 24	State	1953	5190	156	8/6/2009	66.4
Card Machine	Carding Machine Rd	Town	1920	0977	18	4/17/2009	84.5
Carr	Route 138	State	1918	3990	33	8/27/2009	79.5
Creek	Route 24	State	2006	5397	11	8/27/2009	100
I-295 NB / Rte 125 & 138	I-295 NB	State	1976	6311	93	2/3/2009	97.3
I-295 SB / Rte 125 & 138	I-295 SB	State	1976	1552	93	2/3/2009	97.3
I-95 NB / Curtis Farm Rd	I 95 NB	Town	1975	6334	19	8/26/2009	97.2
I-95 SB / Curtis Farm Rd	I 95 SB	Town	1975	1538	16	8/26/2009	97.1
I-95 SB / Sedgely Bk	I 95 SB	State	1974	1537	23	8/27/2009	97.1
I-95NB / Sedgely Bk	I 95 NB	State	1974	6333	22	8/26/2009	96.2
Leavitt	Ridge Rd	State	2000	3632	13	5/12/2008	100
Lower Abagadasset	Browns Point Rd	State	1949	3432	94	7/30/2009	69.4
Mallon Brook	Dingley Rd (North)	Town	1991	6366	20	5/12/2008	46.4
Millay Road / I-295 NB	Millay Rd	State	1976	6312	146	10/20/2009	99
Millay Road / I-295 SB	Millay Rd	State	1976	1553	146	10/20/2009	99
Randall	Route 138	State	1939	3991	33	8/27/2009	73.7
Route 138 / I-295	Route 138	State	1976	6313	288	8/4/2009	85.5
Stone	Ridge Rd	State	1955	5469	19	5/12/2008	90
Two Bridges East	Route 24	State	1934	2974	25	8/6/2009	64.5
Two Bridges West	Route 24	State	1934	0972	30	8/6/2009	64.3
Upper Abagadasset	Batchelder Rd.	Town	2009	1685	24		

Source: Maine DOT

Notes: NB = northbound, SB = southbound

- (3) *Identify potential on and off-road connections that would provide bicycle and pedestrian connections to neighborhoods, schools, waterfronts and other activity centers.*

The Town has created a Walkable Village Plan and Transportation Vision Statement which addresses these connections.

- (4) *Identify major traffic (including pedestrian) generators, such as schools, large businesses, public gathering areas/activities, etc. and related hours of their operations.*

The next two tables list major traffic generators and events that can draw considerable traffic to Bowdoinham.

Major Traffic Generators	Location	Hours of Operation
Bowdoinham Community School	23 Cemetery Rd	School year: 8a.m. & 3 p.m.

Source: Town

Major Events/Activities	Location	Dates
Celebrate Bowdoinham	Philip Maily Waterfront Park	September
Holiday Festival	Village	December
Cruise-in on Cathance Events	Lower Main Street	Summer
Library Plant Sale	Town Hall	May

Source: Town

- (5) *Identify policies and standards for the design, construction and maintenance of public and private roads.*

The Town is concerned that all roadways and bridges be well engineered and built to last so that potential damage will be minimized from flooding and adverse weather and vehicular use. Substandard design or construction will result in higher costs to taxpayers and/or subdivision associations for repair and remediation. Road damage from flooding, adverse weather conditions and from use, especially heavy trucking activity, requires that roads be built to appropriate standards, including sufficient sub-bases, drainage systems and grading. While this may result in higher development costs upfront, in the long-term it will reduce costs for the taxpayers, residents, and business owners, all of whom depend on the road network.

The Land Use Ordinance has road design provisions. The purposes of these provisions are to provide for safe access to and from public and private roads. See the responses in the Analyses section, questions 13 and 14 for examples of these provisions as well as the Ordinance itself for specific standards.

- (6) *List and locate municipal parking areas including capacity, and usage.*

Municipal parking lots are shown in the next table.

Municipal Parking Lots			
Name and Location	Spaces	Overall Condition	Usage
Town Office, 13 School St	10	good	
Town Landing, Route 24	29	good	summer

Source: Town

There is one commuter Park-and-Ride lot in Bowdoinham, located off I-295 at Exit 37. This lot has 24 parking spaces, and is served by GO MAINE, a statewide commuter service.

- (7) *Identify airports within or adjacent to the community and describe applicable airport zoning and airspace protection ordinances your community has in place.*

The Merrymeeting Field Airport is privately owned and located approximately one mile southeast of the village, with a runway of 1,935 feet. There are no published instrument procedures for this airport. It is open to the public and averaged 58 aircraft operations per

month in 2011, of which 86% were local general aviation and 14% were transient general aviation.

Some land around the airport is conserved (Wallentine Parcel). The Land Use Ordinance does not include specific protections for the airport, like limitations on incompatible uses around the airfield. The general performance standards in site plan review limit building height to 40 feet, with lower maximum heights for storage facilities and for buildings in certain shoreland zones. There is no height limit for telecommunications and related towers but the provisions state, "The tower should be located so that the distance it is setback from the property line is equal to or greater than its height."

The closest airports to Bowdoinham with instrument procedures:

- Brunswick Executive Airport (7 nm S)
- Wiscasset Airport (8 nm E)
- Auburn/Lewiston Municipal Airport (17 nm W)
- Augusta State Airport (20 nm N)

(8) *Identify bus or van services.*

Coastal Trans, Inc. (CTI) is a State of Maine designated Regional Transportation Provider. CTI operates transportation services for residents of Knox, Lincoln, and Sagadahoc Counties and the Towns of Brunswick and Harpswell. CTI provides Non-Emergency Medical Transportation for MaineCare eligible riders, as well as services for riders who are elderly, have disabilities, and people with low income and transportation for the public. They currently work with a number of agencies to provide connections to services for mental health, medical care, and adult rehabilitation services. CTI operates a fleet of agency vehicles that include ADA accessible buses, as well as sedans and vans to provide transportation services. They operate Demand-Response services for riders, and a Midcoast Shuttle that provides round-trip morning and afternoon service from Brunswick to Edgecomb. Within Brunswick since September 2010, Coastal Trans, Inc. has operated the Brunswick Explorer, a deviated fixed route transit system that runs Monday through Friday from 6:00 a.m. to 9:00 p.m. Each stop is served hourly at the same time past the hour.

Concord Coach (Trailways) offers daily service on their Maine Coastal Route between Orono and Boston's Logan Airport. Stops include Orono, Bangor, Searsport, Belfast, Lincolnville, Camden/Rockport, Rockland, Waldoboro, Damariscotta, Wiscasset, Bath, Bowdoin College, Brunswick, and Portland.

(9) *Identify existing and proposed marine and rail terminals within your community including potential expansions.*

There are no existing or proposed marine or rail terminals within Bowdoinham.

The railroad line from Brunswick to Waterville runs through Bowdoinham. It is owned by the State of Maine and is currently unused. Ideas for possible future use of the rail line include restoring passenger service and creating a recreational multi-use trail from Topsham to Augusta along the rail corridor. See the Recreation Chapter for more information.

- (10) *If coastal communities identify public ferry service and private boat transportation support facilities (may be covered under Marine Resources with cross reference) including related water-side (docks/piers/wharves) and land-side (parking) facilities.*

There are no public ferries serving Bowdoinham waterways. Private ferry services or water taxis are not available.

Analysis

- (1) *What are the transportation system concerns in the community and region? What, if any, plans exist to address these concerns?*

The Town is concerned with maintaining and improving the condition of its roadways because they provide the primary source of transportation for Bowdoinham residents. Poor road conditions reduce safety and impede the local economy upon which citizens depend. To address this concern the Town continues to implement and update its Road Maintenance Plan.

Maine DOT records high crash locations where eight or more crashes have been reported within a three-year period in Bowdoinham along the segment of Route 24 from the Topsham town line north to the intersection of Merrymeeting Way. Local concern has also been expressed for these intersections: Route 24/Ridge Road, Rt 24/White Road and Rt 24/Carding Machine Road. To address this concern the Town has completed a scoping process with MDOT, reviewing the condition of the road along with the proposed upgrades. In addition, the Town continues to work with the MDOT processes to have the reconstruction of Route 24 placed on MDOT's road work plan.

- (2) *Are conflicts caused by multiple road uses, such as a major state or U.S. route that passes through the community or its downtown and serves as a local service road as well?*

Route 125 functions both as a collector road, serving regional traffic, and as the Main St, serving local traffic. Route 24 also passes through the village. Both roadways raise safety concerns due to the often-excessive speed of through-traffic and because of the overall high traffic volumes.

Where the speed limit is not posted, the following limits apply:

- 15 mph in a school zone during recess or during opening or closing hours
- 25 mph in a business or residential area or built up portion
- 45 mph on all other public ways

As a controlled access highway, I-295, an arterial serving long distance and regional traffic at high speeds, does not conflict with local traffic.

- (3) *To what extent do sidewalks connect residential areas with schools, neighborhood shopping areas, and other daily destinations?*

In 2009, Bowdoinham approved the use of up to \$133,750 from the Undesignated Fund Balance as the local match for a grant of \$535,000 in Federal Enhancement Funds distributed

through the Maine DOT Quality Community Program for the engineering and construction of sidewalks in the village area. Sidewalks have been construction on the following:

- Main Street - from River Road to School Street
- School Street - from Main Street to the John C. Coombs Municipal Building & Town Hall
- Center Street
- Cemetery Road
- River Road - from the Cathance River bridge to Ridge Road
- Bay Road - about 500-ft from the Cathance River bridge
- Ridge Road - from River Road to Cemetery Road

These sidewalks serve to connect the Town Office, Bowdoinham Public Library, Town Hall, Fire Station, Bowdoinham Community School, Maily Waterfront Park, Bowdoinham Recreation Fields and local businesses.

Additional sidewalks are needed to connect neighborhoods to the village area.

- (4) *How are walking and bicycling integrated into the community's transportation network (including access to schools, parks, and other community destinations)?*

Vehicular volumes and speeding threaten the safety of pedestrians and bicyclists. Most roads have narrow and inadequate shoulders. Increased bicycle use of roadways in summer impedes motor vehicle mobility. The addition of sidewalks and multi-use paths in certain areas as noted in the strategies section of this chapter could improve both of these issues, but would require the expenditure of public funds and the cooperation of private landowners.

The Town's Transportation Vision Statement calls for several improvements for walking and bicycling.

- (5) *How do state and regional transportation plans relate to your community?*

The 2004-2025 Long Range Transportation Improvement Plan: Keeping Maine Moving, a technical amendment to the 2000-2020 Maine DOT 20-Year Plan, provides overall goals for the maintenance and improvement of the State transportation system to meet the needs of residents and businesses, while noting significant public funding limitations. The 20-year plan's goals agree generally with this Comprehensive Plan.

The Maine DOT Connecting Maine: Statewide Long-Range Transportation Plan 2008–2030, identifies Route 24 (River Road) as the Midcoast Region's second-most important Corridor of Regional Economic Significance (CREST). Plan suggestions related to Bowdoinham include capital investments to improve Route 24 and working with Richmond, Bowdoinham, Topsham and Brunswick to develop master plans for I-295 interchanges that balance transportation access with economic development needs. In 2013, Midcoast Council of Government's created a Corridor Management Plan for Route 24 with participation from the municipalities of Harpswell, Brunswick, Topsham, Bowdoinham and Richmond and funding from Maine Department of Transportation.

The Maine DOT Multimodal Six-Year Transportation Capital Improvement Plan 2010-2015, includes Bridge Bridge Improvement: Abagadasset Bridge (#5493) (Candidate # 43214).

The Maine DOT Biennial Capital Work Plan for Fiscal Years 2012-2013, included these Bowdoinham projects, which have been completed:

- Highway Resurfacing preservation overlay for Route 201 through Bowdoin, Bowdoinham and Richmond (8.4 miles at an estimated cost \$958,287 WIN# 019130.00)
- Sidewalk engineering, property acquisition and construction within the village area at an estimated cost of \$668,750 WIN# 017473.00)

- (6) *What is the community's current and approximate future budget for road maintenance and improvement?*

Road maintenance is an ongoing effort and municipal budgets are often stretched as the cost of such upkeep increases faster than the costs of other goods and services, due principally to the costs of petroleum-based products like asphalt. The State and federal match for such work has always been important and has become even more crucial to maintain safe roadways.

The Town has a road maintenance plan that covers ten years and is updated annually. The plan references Road Surface Management Systems (RSMS) for the maintenance, resurfacing, reconstruction and planning of municipal roadways.

- (7) *Are there parking issues in the community? If so what are they?*

The Town created ten new parallel parking spaces on Main Street with its sidewalk project. There is limited parking on Main Street for businesses and their customers.

- (8) *If there are parking standards, do they discourage development in village or downtown areas?*

Off-street parking requirements in the Land Use Ordinance, including in village and shoreland areas, have not discouraged development in the village or pushed development out of the village. The lack of vacant lots in the village though does limit new development with the exception of redevelopment. Existing lots in the village tend to be small, which therefore would require the consolidation of lots or cooperative agreements with neighbors to provide for more off-street parking opportunities.

- (9) *Do available transit services meet the current and foreseeable needs of community residents? If transit services are not adequate, how will the community address the needs?*

The frequency of scheduled bus service is insufficient for most individuals to be able to use on a regular basis for travel outside of Brunswick. The dispersed location of residents and of workplaces inhibits public transportation to some extent in the region as a whole.

Coastal Trans, Inc. (CTI) is a State of Maine designated Regional Transportation Provider. CTI operates transportation services for residents of Knox, Lincoln, and Sagadahoc Counties and the Towns of Brunswick and Harpswell. CTI provides Non-Emergency Medical Transportation for MaineCare eligible riders, as well as services for riders who are elderly, have disabilities, and people with low income and transportation for the public. Within Brunswick since September 2010, Coastal Trans, Inc. has operated the Brunswick Explorer, a

deviated fixed route transit system that operates Monday through Friday from 6:00 a.m. to 9:00 p.m. Each stop is served hourly at the same time past the hour.

Concord Coach (Trailways) offers daily service on their Maine Coastal Route between Orono and Boston's Logan Airport. Nearby stops include Bath, Bowdoin College, and Brunswick.

- (10) *If the community hosts a transportation terminal, such as an airport, passenger rail station, or ferry terminal, how does it connect to other transportation modes (e.g. automobile, pedestrian, bicycle, transit)?*

The Town hosts no passenger rail station or ferry terminal.

- (11) *If the community hosts or abuts any public airports, what coordination has been undertaken to ensure that required airspace is protected now and in the future? How does the community coordinate with the owner(s) of private airports?*

The Merrymeeting Field Airport is privately owned and located approximately one mile southeast of the village. No rental vehicles or public transportation serves the airport. Currently, the Town does not coordinate with the Airport owner(s).

- (12) *If you are a coastal community are land-side or water-side transportation facilities needed? How will the community address these needs?*

Within Bowdoinham, public access to the shorefront is found at these locations:

- Maily Waterfront Park (Town Landing Boat Launch) on the Cathance River
- CMP Carry-in (CMP property) on the Lower Abagadasset River
- Gallant Carry-in (State Inland Fisheries and Wildlife property) on the Upper Abagadasset River
- Unnamed off Porkpoint Rd (State agricultural property) on the Kennebec River, below Swan Island

This Town Landing Boat Launch meets current and anticipated needs. For more information, see the Public Facilities and Service Chapter, and Recreation Chapter.

The following marine related transportation facilities (and improvements) are needed in Bowdoinham: pump house and bathroom facilities at the waterfront for boaters.

Funding for these projects will be sought from State and federal sources, as noted in the Capital Investment Plan of this Comprehensive Plan, and in the Capital Improvement Plan updated by the Town on a biannual basis.

- (13) *Does the community have local access management or traffic permitting measures in place?*

The Land Use Ordinance has access management performance standards that regulate new driveways and commercial entrances onto Town roads with minimum site distance requirements, based upon posted speeds, as well as standards for geometry, drainage, construction, curbs and sidewalks. Access management related provisions are included in subdivision provisions as well:

- “The layout of the lots and streets within the subdivision shall minimize the number of points of vehicular access onto existing public streets.”
- “If lots are created that have direct vehicle access to or from an existing public street, the number of access points shall be minimized through the use of shared driveways or common access ways.”
- “Where a lot has frontage on two (2) or more streets, the access to the lot shall be provided across the frontage and to the street where there is lesser potential for traffic congestion and for hazards to traffic and pedestrians.”

(14) Do the local road design standards support the community’s desired land use pattern?

The local road design standards have generally supported the type of development favored by residents: low density residential. However, much development occurs on a piecemeal basis outside of the subdivision or the site plan review process. See the Future Land Use Plan of this Comprehensive Plan for discussion of the community’s desired land use pattern.

The road standards of the Land Use Ordinance differentiate road design based upon two categories: roads serving less than 10 dwelling units and roads serving 10 or more dwelling units. The subdivision standards differentiate road design based upon two categories: minor subdivisions and major subdivisions (serving 6 or more dwelling units).

In addition to local regulations, State access management rules apply to State and State Aid roads.

(15) Do the local road design standards support bicycle and pedestrian transportation?

Subdivision provisions do encourage street connectivity and sidewalk installation, which support bicycle and pedestrian use by creating multiple (and shorter) linkages to existing roadways and safe spaces for people to walk along roads. Such provisions include:

- “Any subdivision containing more than fifteen (15) dwelling units or lots, shall have at least two (2) street connections with existing public streets, streets shown on an Official Map, or streets on an approved subdivision plan for which performance guarantees have been filed and accepted.”, “Where street lengths exceed one thousand (1,000) feet between intersections with other streets, the Board may require a utility/pedestrian easement, at least twenty (20) feet in width, to provide for underground utility crossings and/or a pedestrian pathway of at least five (5) feet in width...”
- “Sidewalks are required if connection to an existing sidewalk is feasible.”
- “Sidewalks are required for streets carrying more than one hundred fifty (150) trips a day or to a distance within the subdivision as deemed appropriate by the Planning Board.”

Site plan approval criteria provisions include, “Pedestrian Circulation – The proposed site layout will provide for safe pedestrian circulation both on-site and off-site.” General performance standards in the Land Use Ordinance also address pedestrian and cyclist safety for internal roadways and parking lot design.

(16) Do planned or recently built subdivision roads (residential or commercial) simply dead-end or do they allow for expansion to adjacent land and encourage the creation of a network of local

streets? Where dead-ends are unavoidable, are mechanisms in place to encourage shorter dead-ends resulting in compact and efficient subdivision designs?

Since 2000, there have been 4 approved and built subdivisions in which new roads were constructed. Of these, 4 included dead-end roads (i.e., having just one access).

The subdivision provisions state, “A dead-end street shall be limited to a maximum of fifteen (15) dwelling units (not including corner lots that gain their access from another street). The length of a dead-end shall not exceed one thousand five hundred (1,500) feet.”

The Land Use Ordinance allows for cluster (conservation) subdivision developments that conserve a portion of the parent parcel. Since 2000, there have been 4 subdivisions that included the permanent dedication of open space for conservation, recreation, agriculture or wood lot use.

The Town can allow and encourage housing development in areas close to existing public and private services, so that residents can choose to walk rather than drive, and so that public transportation with fixed-routes becomes more practical at sufficient development (housing) densities to provide adequate ridership levels. In less developed portions of the Town, the use of cluster (conservation) subdivisions can preserve habitat by setting aside ecologically sensitive but developable land into permanent conservation. See the Housing Chapter, Natural Resources Chapter and Existing Land Use Chapter of this Comprehensive Plan for more information.

Public Facilities & Services

Conditions and Trends

1. *Location of facilities and service areas (mapped as appropriate).*

See the map titled Public Facilities and Services.

2. *General physical condition of facilities and equipment;*
3. *Capacity and anticipated demand during the planning period;*
4. *Identification of who owns/manages the systems;*

For (2) through (4) see the responses below.

5. *Estimated costs of needed capital improvements to public facilities; and*

See the Capital Investment Plan.

6. *the following information related to each of these public facilities and services:*

a. Sewerage and/or Water Supply – Identify number and types of users, and percent of households served

Bowdoinham has no public sewer. In 2011, the Bowdoinham Water District has 252 water connections in Bowdoinham. Most are residential customers (about 21% of the Town's households are connected). Twelve are commercial customers. Five are municipal accounts (Town of Bowdoinham). The Bowdoinham Community School is connected. There are 46 fire hydrants in Bowdoinham. The Town of Bowdoin has 23 connections and 8 hydrants.

b. Septage – Identify any community policies or regulations regarding septage collection and disposal.

The Town follows State regulations regarding septage collection and disposal from municipal facilities. The Town enforces the State Plumbing Code regarding subsurface waste.

c. Solid Waste – Describe the community's solid waste management system. Identify types and amounts of municipal solid waste and recycled materials for the past five (5) years.

Municipal Solid Waste expenses in Bowdoinham have been increasing as they have statewide. Bowdoinham's per capita cost in 2010 was lower than the state average of \$69.04. The State Planning Office was unable to provide recycling rates for the Town.

The Town estimates the current rate at 54%. In 1998, the rate was 64%. The State Planning Office did not provide five years of data as part of the community dataset prepared in 2011. Figures provided were for 2010 and are shown in the next table. However, the data from the State Planning Office does not show the revenue from the Town’s municipal solid waste from the sale of the trash tickets. As Bowdoinham uses the “Pay As You Throw Program” charging \$2.50 per bag. For more information, see the description below under Solid Waste and Recycling Department.

Bowdoinham Municipal Solid Waste (MSW) Expenses in 2010			
Municipal MSW Expense	Amount Per Person	Tons of MSW	Estimated Population
\$172,012.00	\$65.85	319.66	2,612

Source: State Planning Office

Municipal solid waste is transported to Pine Tree Waste in Bath. The Town participates in Household Hazardous Waste Collection using a private vendor.

In addition, the Land Use Ordinance has solid waste provisions.

d. Stormwater Management – Identify combined sewer overflows. For Municipal Separate Stormwater System (MS4) communities, describe plan and status of the major goals of the MS4 requirements.

Bowdoinham does not have public sewers. The Town is not an MS4 community.

e. Power and Communications – Availability of 3-phase power, Internet (including broadband), and cable within the community.

Three-phase power is available on Bay Road and Main Street. Broadband and cable television service is available to most properties abutting State and State aid roads, however, notable gaps are found in several areas.

f. Emergency Response System –Average call response times for fire, police, and emergency/rescue.

In 2009, the Town Fire Department responded to 108 calls, of which 16 were out of town for mutual aid in surrounding towns. Within Bowdoinham, the average response time was 12 minutes in 2013.

Sagadahoc County Sheriff’s Office provides police protection for the Town. In 2010, the Sheriff’s Office responded to or handled 815 incidents, which was a 14% decrease from 2009. The most common call for service was traffic related incidents, which made up approximately 15% of the total calls for service. The Patrol Division stopped 348 vehicles and issued 69 summonses and 38 warnings. There were seven burglaries reported in 2010, a 50% drop compared to 2009. Average response time was 9 minutes.

In 2009, Bowdoinham Emergency Medical Services received 172 calls for medical attention, and were able to respond to most, although staffing with volunteers who hold full time jobs elsewhere presents challenges during the day. Average response time was 11 minutes.

g. Education – Identify school administrative unit. Include primary/secondary school system enrollment for the most recent year information is available and for the ten (10) years after the anticipated adoption of plan.

The Town of Bowdoinham is a member community of Regional School Unit / School Administrative District 75. Other member communities are Harpswell, Topsham and Bowdoin. The voters of Bowdoinham elect two School Directors to represent them on the Board of Directors.

The Bowdoinham Community School, Grades K-5, is located on Cemetery Road in Bowdoinham and provides a location for cultural and community events. The local elementary school has served K-5 since 2001. Sixth, seventh and eighth grade students attend middle school in Topsham. Until 1998 access to the gymnasium and athletic facilities was severely limited but an agreement allows the Recreation Department access for after school and weekend athletic programs for youth. Secondary School students attend Mt. Ararat High School in Topsham. The next table shows school enrollments of Bowdoinham residents in area schools and the total enrollments for these schools.

School Enrollment as of October 2011			
District/Unit	School	Bowdoinham Resident Enrollment	Total Enrollment
Yarmouth Schools	Frank H Harrison Middle School	1	450
MSAD 75	Bowdoin Central School	2	214
MSAD 75	Bowdoinham Community School	191	198
MSAD 75	Harpswell Community School	1	160
MSAD 75	Mt Ararat High School	136	877
MSAD 75	Woodside Elementary School	11	361
MSAD 75	Mt Ararat Middle School	104	617
RSU 02	Marcia Buker School	2	277
RSU 02	Richmond High School	3	142
RSU 02	Richmond Middle School	2	119
Waynflete School	Waynflete School	4	542

	Primary Grades	317	2,699
	Secondary Grades	140	1,258
	Total	457	3,957

Source: Maine Department of Education

Notes: In 2006, there were 484 Bowdoinham resident students enrolled (K-8th Grade: 321 students; 9th-12th Grade: 163 students)

As of February 2012, the Superintendent of RSU/MSAD 75 does not have enrollment projections for the next ten years. The RSU records a total enrollment decline of 353 students from 2007 to 2012, about -2.6% per year.

h. Health Care - Describe major health care facilities (hospitals, clinics) and other providers serving the community. Identify public health and social services supported by the community through municipal subsidy.

There is no health care facility in Bowdoinham. Bowdoinham is served by the Richmond Area Health Center, two hospitals in Brunswick: Parkview Adventist Medical Center and Mid Coast Hospital. Ambulance services are provided by an annual contractual agreement between the Town of Bowdoinham and Northeast Ambulance Service. The Town funds the Bowdoinham EMS annually through the Town operating budget. In 2010 the EMS budget was \$10,550 and in 2011 the budget was \$10,750. The Bowdoinham EMS currently has 1 paramedic, 6 EMTs and 4 drivers. All are volunteers.

Richmond Area Health Center provides family health care. In 2010, the health center served 3,044 patients including individuals from Bowdoinham, Dresden, Gardiner, Litchfield, and Richmond as well as residents of other communities. Their community board has facilitated many renovations in response to the growth of the practice. The health center is an outpatient practice offering referrals to Maine General Medical Center (Augusta) as well as with specialists at Parkview Hospital (Brunswick), Mid-Coast Hospital (Brunswick), Central Maine Medical Center (Lewiston), and St. Mary's Hospital (Lewiston).

Parkview Adventist Medical Center is a not-for-profit, faith-based health services organization. Parkview offers digital diagnostic services and minimally invasive surgery.

In 2001, Mid-Coast Hospital opened a consolidated facility that includes emergency and intensive care departments, in-patient and out-patient surgery, advanced diagnostics, cardiac and pulmonary rehabilitation, a sleep lab, and wound care center. Mid-Coast Hospital serves approximately 100,000 residents in the towns of Alna, Arrowsic, Boothbay, Boothbay Harbor, Bowdoin, Bowdoinham, Brunswick, Durham, Edgecomb, Freeport, Georgetown, Harpswell, Lisbon Falls, Phippsburg, Richmond, Topsham, West Bath, Westport, Wiscasset and Woolwich.

i. Municipal Government Facilities and Services – Describe facilities and staffing for municipal administrative, enforcement, and public works operations.

Form of Government

Bowdoinham is governed by the Town Manager Plan as defined in Maine Statutes, Title 30 §2631:

“The government (under this plan)... shall consist of a town meeting, an elected board of selectmen, an elected school committee, an appointed town manager and any other officials and employees that may be appointed under this subchapter, general law or ordinance. Other town officials may be elected by ballot, including, but not limited to, moderator, assessors, overseers of the poor, clerk and treasurer”.

Staffing/Personnel

Select Board -

In Bowdoinham, the only elected body is the Select Board. They also serve (and are therefore elected as) the Board of Assessors and the Overseers of the Poor. The registered voters elect them for staggered terms of three years.

Assessor -

The Select Board has delegated the authority for assessments to an assessors' agent that is a part-time employee and a Certified Maine Assessor.

Overseer of the Poor -

The Select Board has delegated this authority to the Town Manager who also serves as the General Assistance Administrator. Assistance to the poor is provided according to the General Assistance Ordinance developed and approved by the Maine Department of Health and Human Services and the Maine Municipal Association. This ordinance assures that all members of the public qualifying for assistance shall receive it in a fair and judicious manner.

Municipal Officials Appointed by the Select Board -

Under the Town Manager Plan, the Select Board may choose to appoint all town officials. Bowdoinham has chosen to grant authority to the Select Board to appoint the Treasurer, Tax Collector, and Town Clerk. These officials, who may be elected in other towns, have statutory responsibilities, but they are still accountable to the Town Manager, unless otherwise assigned by charter or ordinance. The Select Board may remove these officials for cause, after notice and hearing (30 MRSA § 2601)

Town Manager -

The Select Board currently appoints the Town Manager. Because it is such an important administrative position the powers and duties of town manager are quoted in full from Maine Statutes (30A MRSA§2636).

1. “Executive and administrative officer. Is the chief executive and administrative official of the town;
2. Administer offices. Is responsible to the selectmen for the administration of all departments and offices over which the selectmen have control;

3. Execute laws and ordinances. Shall execute all laws and ordinances of the town;
4. Appoint department heads. Shall serve in any office as the head of any department under the control of the selectmen when directed by the selectmen;
5. Appoint town officials. Unless otherwise provided by town ordinance, shall appoint, supervise and control all town officials whom the municipal officers are required by law to appoint, except members of boards, commissions, committees and single assessors; and appoint, supervise and control all other officials, subordinates and assistants, except that the town manager may delegate this authority to a department head and report all appointments to the board of selectmen.
6. Purchasing agent Shall act as purchasing agent for all departments, except the school department, provided that the town or the selectmen may require that all purchases greater than a designated amount must be submitted to sealed bid;
7. Attend meetings of selectmen. Shall attend all meetings of the board of selectmen, and the town manager may attend meetings when the manager's removal is being considered.
8. Make recommendations. Shall make recommendations to the board of selectmen for the more efficient operation of the town;
9. Attend town meetings. Shall attend all town meetings and hearings;
10. Inform of financial condition. Shall keep the board of selectmen and the residents of the town Informed as to the town's financial condition;
11. Collect data. Shall collect data necessary to prepare the budget;
12. Assist residents. Shall assist, insofar as possible, residents and taxpayers in discovering their lawful remedies in cases Involving complaints of unfair vendor, administrative and governmental practices; and
13. Remove appointments. Has exclusive authority to remove for cause, after notice and hearing, all persons whom the manager is authorized to appoint and report all removals to the board of selectmen.”

Treasurer -

The Select Board appoints the Treasurer, traditionally, the Town Manager. The Treasurer shall disburse money only on the authority of a warrant affirmatively voted by the majority of the Selectmen, with the exception of routine payroll, which can be authorized by written policy, on file with the Town Clerk. The Treasurer shall keep all financial accounts, which shall be examined by the municipal officers every month. The Treasurer appoints a Deputy to assure continued coverage. The Treasurer is covered by a Faithful Performance of Duties Bond.

Tax Collector -

Traditionally the Town Manager has been appointed as Tax Collector. The office is responsible for the collection of all excises, real estate, and personal property taxes. The Tax Collector is covered by a Faithful Performance of Duties Bond. The Town maintains insurance against criminal acts by all Town employees.

Municipal Clerk -

Pursuant to state law the office of the Town Clerk is responsible for maintaining the official records of the Town: the supervision of state and municipal elections; the recording of vital statistics (birth, death, and marriage); and the issuing of all permits and

licenses as required by state law. The Town Clerk appoints a Deputy and an Assistant to assure there are no lapses of coverage.

Appointed Municipal Staff -

The Select Board confirms the appointment of administrative positions as recommended by the Town Manager.

Assessors Agent -

The Board of Assessors has appointed a professional Assessor as their agent who provides complete assessing services for the town. The Assessors' Agent has office hours weekly (8 hours) and is assisted by an Assessing Clerk who works 12 hours per week. Both positions are part-time paid positions.

Code Enforcement Officer -

This position, which includes Local Plumbing Inspector (LPI), is annually appointed by the Select Board. According to a law passed in 1993, Code Enforcement Officers are now required to be trained and certified. The Town has two staff that are certified code enforcement officers and licensed plumbing inspectors. Both are full-time employees with other duties.

Registrar of Voters -

This is an appointment every two years in the odd-numbered year (i.e., 2013), and generally resides with the Town Clerk. The position receives no separate compensation. The duties and responsibilities of the Registrar are prescribed by state statute.

Road Commissioner -

The Town Manager is appointed Road Commissioner. This position is required by State statute and serves as the department head for the Public Works Department. This position receives no separate compensation.

Recreation Director -

This part-time position was created in 1998 when the Selectmen discovered, through accounting changes, that the recreation program in Bowdoinham was approaching \$20,000 per year and they felt it necessary to have a program supervisor.

Solid Waste and Recycling Director -

This position is for 15 hours per week and is paid an hourly rate. The Solid Waste and Recycling Director is responsible for the supervision of four part-time employees.

Appointed Stipend Positions -

The Select Board also has authority to appoint positions which receive an annual stipend. The Select Board have adopted a policy to assure fair and equitable treatment of these stipend positions.

Animal Control Officer -

This is an annual appointment required by state law. In addition to an annual stipend the ACO is also paid mileage for the use of a privately owned vehicle used in the execution of the duties and responsibilities of the position as required by state law.

Health Officer -

This appointment is required by state law and until 1997 was filled by the Town Manager. At that time, the Town Manager requested the Selectmen appoint a person with health care training. It is now a stipend position currently filled by a resident with a nursing degree.

Harbor Master -

This is an annual appointment by the Town Manager and confirmed by the Selectmen. This position, authorized by State law, requires certification and receives an annual stipend. The position has the authority to manage the harbor on the Cathance River according to Rules & Regulations for Harbor Management as adopted by the Board of Selectmen.

Fire Chief -

The Town of Bowdoinham has a municipal fire department created by local ordinance. The Fire Chief is appointed by the Select Board for a term of three years. This position receives an annual stipend.

Constable -

There are no appointed constables in the Town of Bowdoinham.

Cemetery Sexton -

In a position created in 1999, the Sexton supervises the maintenance and care of the cemeteries in town.

Quasi-Judicial or Municipal Boards -

State Law requires the establishments of a Planning Board and the Board of Appeals. Since some of the decisions are similar to judicial decisions and they have to follow adjudicator procedures, they are referred to as Quasi (somewhat) Judicial.

Planning Board -

The Town appoints 5 members and 2 alternates for staggered 5 year terms. This board is governed by bylaws approved and adopted by the Selectmen. Land Use Ordinances adopted by the Town at Town meeting govern decisions on permits issued by the Planning Board. The members of the Planning Board are volunteers and do not receive an annual stipend.

Community and Economic Development Director -

This full-time position oversees the Department of Community and Economic Development to support existing businesses of Bowdoinham through the promotion of their services, educational opportunities, obtaining grants to improve public facilities, community awareness and networking.

Municipal Property and Structures

John C. Coombs Building -

The Town's administrative offices are located in the Coombs Building at 13 School Street. The building is a three-story, wood-framed converted school building, built in 1911. The Town purchased the building from SAD 75 in 1989 for \$1.00. In 1998 the first floor was extensively renovated to facilitate efficiency in providing services. The first floor has offices for the Town Manager, Treasurer, Tax Collector, Town Clerk, Registrar of Voters, Assessors Agent, Recreation Director, and Code Enforcement. It also has a small conference room/kitchen and one restroom, which is accessible. The second floor has been made accessible by the installation of a ramp to the back door of the Select Board's Meeting Room. This ramp was replaced in 2011 at a cost of \$10,000. It has two conference/committee meeting rooms, and two rooms permanently occupied by the Bowdoinham Public Library. In 1998 the library received a \$16,000 grant for renovations and now has an accessible bathroom on the second floor. Since the third floor is not accessible, it is used primarily for storage for the town and the library.

The septic system was updated in 1950's and is located at the bottom of School Street on a lot owned by the town. The size and condition are not known but the system has not failed. Since it has not been burdened with the use of 100+ students per day for the last twenty years it seems reasonable to assume it will not need replacement in the near future. However, a replacement system has been designed and is on file with the Sagadahoc Registry of Deeds.

An Energy Efficiency grant was used in 2011 to complete changes to the drainage around the base of the building, to insulate the basement portion, to add insulation to the third floor and to add interior storm-windows throughout the building.

Areas of Deficiency:

1. Parking Lot - The Coombs School lot cannot completely accommodate parking during heavy use events. When the Town Hall is hosting an election or other event and the administrative offices and the Library are open for business there is an overflow of traffic.
2. Town Office layout – With the increasing requirements for town office staff the current layout of the town office is not efficient and lacks good access to assessing records by the public. The storage room in the northwest side of the first floor should be renovated to house the assessing office and assessing records. The front entryway and surrounding area should be renovated to better utilize the space and to increase energy efficiency.
3. Energy efficiency – All exterior windows are in need of replacement to improve energy efficiency and to add security.
4. There are other cosmetic needs in the building as well. The suspended ceiling in the town office counter area needs to be replaced; carpet needs replacement on the second floor; and the entire interior needs painting.

Town Hall -

The Town Hall is located adjacent to the Coombs Building. The steeple and front foundation was extensively renovated in 1996 and 1997 at a cost of \$40,000. In 1998, the hard wood floor was refinished. The CDBG grant for \$55,000 was used to install a restroom and move the primary entrance so people do not have to step out into traffic and to make the building handicapped accessible. In 2011, the front stairs leading to School Street were replaced by the Public Works Department. In 2012, the entire exterior of the building was scraped, primed and painted at a cost of \$8,600. Many governmental functions take place in this building - elections, town meetings, and public events.

Areas of Deficiency:

1. Energy Efficiency – The building has very little, if any, insulation and is heated by an oil-fired boiler. As such, the building is not energy efficient. Within the next five years, the oil boiler and power vent needs replacement. The replacement heating system should be more energy efficient and not oil-fired.
2. Lighting – The building is equipped with several small wall-mounted light fixtures and a few overhead, poorly designed lights that do not produce enough light for meetings and events. These lights need to be replaced by energy efficient overhead lights.
3. Storage space – There is no storage space for tables and chairs when not in use.

Fire Station Post Road -

The fire station is located on a 4-acre corner lot on Post Road and Center Street. It was constructed in 1998 for a cost of \$363,000 for which the voters approved a ten-year general obligation bond. It provides four bays for fire equipment - three to the front of the building and one to the rear. There are two offices for the Fire Chief and administrative needs of the fire department. It has many modern conveniences for the fire staff including a decontamination shower, heated floors, a radio/communications room and much more. The building provides a large community room complete with kitchen and handicap accessible rest room. A folding partition makes it possible to divide the large space into two rooms. A Use Policy has been developed and adopted by the Select Board for the public use of the community room and the adjoining kitchen. The remainder of the building is used exclusively for fire emergency services.

Public Works Facilities -

The Public Works Facilities include a Public Works Garage, a salt storage building and a cement pad used to store the winter sand pile. These facilities are located on the bank of the Cathance River and was part of the Central Chemical Company complex until 1998 when the town purchased the 20-acre parcel for \$120,000.

Approximately four acres of the original 20 acres have been dedicated to the exclusive use of the Public Works Department. The Public Works Garage is metal construction with a small office for the Public Works Foreman, two bays for accommodating Public Works equipment and a workshop area on the east end of the building. The salt storage building is wood frame construction on a cement pad.

In 2011, the Town Manager assembled a Task Force to review this building and property. The Task Force presented a report to the public on March 29, 2012 that detailed the deficiencies in the building and property. The Task Force also presented several options for the Town to consider.

The Public Works Garage structure is not large enough to store all of the Town's equipment, does not allow for the current equipment to be repaired and maintained by the crew inside a heated bay, and does not include adequate bathroom facilities. It also does not have adequate storage facilities for the various fluids and parts that are needed for the Public Works operation. The building is not efficient to heat and additional insulation cannot be installed without further upgrades to the structure. In order to be continued to be used as a Public Works Garage, the existing siding, roofing, heating, electrical, and lighting systems would need to be significantly upgraded. In addition, significant structural reinforcing will need to be completed as determined by an engineer.

The winter sand and salt is currently stored outside on a deteriorated concrete pad. There are many issues with this arrangement, not the least of which is the environmental concerns of storing the sand/salt mixture outside within the shoreland zone. The winter sand and salt mix should be located in a building that will keep the material dry, which results in better efficiency when spreading it on the roads during winter storms. If the current location is continued to be used, the concrete pad must be replaced at an estimated cost of \$60,000.

In addition, the voters at the annual town meeting in June 2005 adopted a Water Front Plan that recommends utilizing the Town-owned land at the current Public Works Garage location for recreational and open space uses. (When the property was originally purchased in 1998, the Sagadahoc Mill Planning and Development Committee made some of the same recommendations for this parcel of land.) The recommendations in that plan state that the Public Works is not well located and some residents have complained that it is an eyesore. There are also concerns about the current salt shed. The Plan recommends that the Town review operations and consider moving the Public Works location to an alternate location, perhaps near the interstate.”

The overwhelming consensus by the approximately 95 residents in attendance at this meeting was for the Town to find a new location for the Public Works facilities and to construct a new Public Works Garage and Sand/Salt storage building. This is a long-term goal and should be complete within five to ten years.

Recreation Field -

The recreation field is located on the Ridge Road behind the Bowdoinham Community School. The field was developed into two ball fields, a tennis court and a basketball court in the late 1980's. The court is owned jointly with RSU 75, which pays for half of its maintenance.

A "Snack Shack" and storage facility was constructed by community volunteers under the guidance of the Recreation Committee in 1999. It is complete with hot and cold running water and electricity. A storage garage was constructed by the Army Corps of Engineers in 2011. This is used to store equipment for the Recreation Department and field maintenance equipment.

In 2012, a group of volunteers began rehabilitating the regulation size baseball field including replacing the turf, creating basepaths, and improving the drainage. The field is in need of a temporary homerun fence that can be removed to allow continued use of the field for cross country skiing in the winter months, and a permanent backstop.

Philip Maily Park/ Waterfront Park and Harbor -

The reconstruction of the Cathance Landing Waterfront Park is a monument to public private cooperation. The Town and the Maine Department of Conservation had purchased the waterfront property east of Route 24 for development of a boat launch. In 1997 the Town, the Bureau of Conservation, the Seabees, and the National Guard Reserve partnered up with funds and the launching facility received a \$200,000 renovation.

The harbor was organized to accommodate 40 moorings, docks were installed, the lot was completely re-landscaped, and a portion of the parking lot was paved. In 1998, Bowdoinham built a vault privy on the property, using a \$5,500 Department of Conservation grant. This privy was destroyed by fire, was rebuilt and subsequently has been used for storage for the Harbor Master. In 2012, the Town received a planning grant to design a new bathroom facility and possible boat pump-out station for the Waterfront Park. The planning work began in 2013.

River View House -

This single-story wood frame building is located on the bank of the Cathance River and was part of the Central Chemical Company complex until the Town purchased the property in 1998. The building consists of four offices and a small restroom, which is not handicapped accessible. The building is currently leased by Taurus Systems, Inc. on a yearly basis.

Areas of Deficiency: This building is only 984 square feet - so it is very small. The cellar is wet and a sump pump must be maintained for the integrity of the building. The septic system consists of a holding tank that must be emptied on an annual basis.

The site of the Sagadahoc Mill Property -

This building was located on the bank of the Cathance River and was part of the Central Chemical Company complex until the town purchased it in 1998. The building was cavernous - 52,000 square feet. It was in very poor condition and has since been demolished. The lot is 20 acres, of which 4 acres is devoted to the Public Works Department.

Back Hill Storage Building -

This building is located on Back Hill on a 50' x 50' lot. It is of brick construction and was used exclusively for storage of the Historical Society's artifacts of Bowdoinham. In 2012 and 2013, the Historical Society began moving these artifacts to another location as the building is not heated.

Areas of Deficiency: This building does not have electricity so the electric heater is disconnected. The roof is in need of re-shingling and has had leaks over the past several years.

Landfill -

The old landfill, located on the Carding Machine Road was closed in 1992. The Town is required to mow it twice a year to keep the "cap" from being breached by trees and bushes.

Cannon, Veterans' Park -

This area located in the center of the village is a small lot bounded by Route 24 (River Road), and Main Street. It is a commemorative park with a Civil War cannon, a 1908 granite watering trough and a flagpole.

In 2012, as part of the Town's 250th Anniversary Celebration, a group of dedicated volunteers led by Lara Ashouwack renovated the entire park. The base of the cannon was replaced with granite and the cannon was repainted. The flag pole was replaced. The park was completely landscaped to include a walking path with recycled pavement, signs providing information on Bowdoinham's veterans, and new shrubs, trees and flowers. Funding for the project was from the 250th Anniversary Fund created by William Kendall in 1912. The park was rededicated to Bowdoinham veterans on November 11, 2012, Veterans' Day.

Cemeteries and Commemorative Lots Held in Trust -

During the past two centuries, various groups and individuals have left the town designated trust funds for the care and maintenance of a cemetery or a commemorative lot. There are 48 cemeteries in town. The Sexton supervises their maintenance with assistance from the Town Manager and Public Works Department.

Public Services

The administrative offices for the Town of Bowdoinham are located in the Coombs Building at 13 School Street. The staff is adequate for the current population. There are two areas, which show strain and will require review and possible expansion to meet the public need for services: Recreation and Public Works.

Administrative Services

Tax Collection -

The Tax Collector is responsible for the collection of excise taxes on boats, airplanes, and motor vehicles as well as for the collection of taxes on real and personal property.

Treasurer' Office -

The Treasurer's office is responsible for recording all receipts from the Tax Collector and Town Clerk as well as the recording of all accounts payable and payroll.

Town Clerk -

The Town Clerk is responsible for the issuance of all State licenses including hunting and fishing, dog, marriage and burial licenses. The Town Clerk is also responsible for the recording of all vital statistics of the community such as birth and death records.

Code Enforcement -

The Town employs a state certified Code Enforcement Officer and Local Plumbing Inspector. This position is combined with the Community and Economic Development Director. In addition, a second employee is trained to be a certified Code Enforcement Officer and Local Plumbing Inspector. The Community and Economic Development Director works full-time. The second employee also serves as an office assistant handling duties of an assistant town clerk and tax collector. This position is currently full-time (as of July 2013) with 20 hours per week dedicated to code enforcement and 20 hours per week dedicated to administrative duties. Both of these positions consult with builders, developers and homeowners, to interpret state environmental laws and local ordinances. They inspect and enforce permits and licenses. The Community and Economic Development Director is the liaison with the Planning Board and the Board of Appeals.

Assessing Services -

The town contracts with an assessing professional to provide tax assessment services on all real and personal property in Bowdoinham. This office is supported with an assessing secretary.

Departments

Public Works Department -

Supervisor: Road Commissioner

The Public Works staff consists of a full-time Public Works Foreman, two full time drivers/laborers and one on-call part time snow plow driver. The Supervisor is the Road Commissioner, which in Bowdoinham is the Town Manager. This department is responsible for the maintenance of all town facilities (with the exception of the Post Road Fire Station), 46 miles of roadway and 92 miles of drainage system, and maintenance and mowing of three cemeteries. Since 2000, the Town has increased the size of the staff for the Public Works Department from one full-time and one part-time employee to three full-time and one part-time seasonal employee. The Town also purchased three plow trucks equipped with dump bodies, plows, wings and sanders and a 1-ton plow truck. The

Department currently rents excavators and front-end loaders to assist with its work during the summer construction season and winter plowing season.

In the next ten years, the Public Works Facility will need to be relocated to another area in town. In addition, as the demand for services from the Department increase, it is likely that an additional full-time employee will be needed.

Solid Waste and Recycling Department -

Bowdoinham's Recycling Program is housed in a converted chicken barn. The Town has a three-year contract for the exclusive use of approximately 15,000 square feet of the building.

The "Recycling Barn" is open to the public and is staffed by a part-time director and three part-time laborers.

A hauling contractor under a three-year contract picks up household trash and recycling material at curbside. The contractor drops the recyclable material at the Recycling Barn and takes the bulky waste to Pine Tree Waste, Inc./Cassella in Bath for a contracted tipping fee of \$73.39 per ton in 2013. In 1998, that fee was \$50.00 per ton. There is also a pay per bag program. Residents may pick up their tags at the Country Store, the Long Branch Store or the Town Office. This fee raised \$72,000 in revenue in 2012. In 1998, this fee raised \$42,000 in revenue and employed two people, of which one was full-time and one was part-time. In 2013, the department had 4 employees: a part-time manager and three part-time staff.

Recreation Department -

During the spring of 1998 there was a resurgence of interest in the recreation program. As discussion progressed, the Selectmen believed it more appropriate to have a Recreation Department rather than expecting a fundraising committee to be fully responsible for the program. In July 1998, the Selectmen created a 20-hour per week Recreation Director position. The hours were increased to 22.5 per week in 2013.

As the population continues to age, there is a new focus on providing activities for adults and seniors. In the next ten years, it is expected that more hours will be needed to handle coordination and programming for adult and senior activities.

Harbor and Waterfront Department -

The Town owns 1,300 feet of waterfront along the Cathance River and the responsibility to manage the waterfront is assigned to an appointed Harbor Master. Currently the Harbor Master receives a modest stipend.

Community and Economic Development -

This Department supports existing businesses of Bowdoinham through the promotion of their services, educational opportunities, obtaining grants for improvements to public facilities, community awareness and networking. It strives to develop and attract sustainable businesses to Bowdoinham that will reflect the high quality of life and strong

sense of community. The Department also develops, organizes, and coordinates community-enhancing events to bring together the citizens of Bowdoinham. It is funded through a TIF (Tax Increment Financing) that originated by town vote in June 2000. The funds are derived from tax dollars of the Maritime & Northeast Pipeline properties located in Bowdoinham.

Emergency Medical Services -

Bowdoinham EMS has 11 responders in 2013. The EMS Director receives a stipend, and the other volunteers receive small stipends. Staffing with volunteers who hold full and part-time jobs elsewhere presents challenges during the day. The Town contracts with Northeast Ambulance to provide ambulance service to the residents.

Fire Department -

The Fire Chief is appointed for a three-year term by the Selectmen and supervises the Fire Department. In 2013, there are 25 fire department personnel and 1 junior firefighter. Of these 26, all are volunteers receiving modest stipends. Maintaining adequate staffing is difficult given that many volunteers have full-time employment, often outside of Town. Increased state training (totaling 18 mandatory training days annually) and in-house training have increased the time commitment required.

Police Services -

The Bowdoinham Police Department was disbanded in the early 1990's. Since that time, the Sagadahoc Sheriff's Department has provided police coverage for the community. There are currently no constables appointed.

Public Sewer and Water -

The Town of Bowdoinham has no public sewer system; however, the Bowdoinham Water District provides public water to most of the Village. The Selectmen appoint the trustees to the Water District but otherwise have no voice in the administration of the entity. For further discussion, please see the Public Water Supply Addendum of this Plan.

Public Library -

The Bowdoinham Public Library is located on the second floor of the Coombs Building. The Library is only partially supported by the Town's municipal budget with an annual appropriation. The Friends' of the Bowdoinham Public Library raise funds throughout the year with plant sales, book sales and other fundraisers for the remainder of funding necessary to operate the library.

Town Committees

Town volunteer committees advise and assist the Town boards and municipal staff to provide municipal services. These committees allow residents a meaningful opportunity to have a say in what types of services the town offers now and should offer in the future. The following is a list of current committees.

- Bowdoinham Energy Committee promotes significant reductions in energy use and emissions in town operations and providing opportunities to inform the community about how they can do the same for their homes and businesses.
- Cable/Internet Committee researches solutions to providing expanded broadband internet service to areas of town that do not have service or have slow service. Works with the Town Manager in negotiating a new franchise agreement with Comcast Cable.
- Committee on Aging creates opportunities to allow people to continue to live in Bowdoinham as they age.
- Community Development Advisory Committee advises the Select Board to develop plans that support and enhance economic development. This Committee will develop a plan for the goals, strategies and projects for Bowdoinham's economic development.
- Comprehensive Planning Committee creates an updated Comprehensive Plan that is consistent with the Growth Management Act (30-A MRSA §4312 et seq.).
- Finance Advisory Committee assists the Select Board and the Treasurer with financial decisions regarding development of the municipal budget and the investment program for the Town of Bowdoinham.
- Solid Waste Advisory Committee advises the Select Board on matters related to the efficiency and effectiveness of the municipal solid waste and recycling program as well as to educate the community on matters related to solid waste and recycling. Encourage citizens to participate in recycling and to suggest new policies and procedures, which will further strengthen the program.
- Walking, Biking and Paddling Group advises the Select Board on improving these activities and related facilities.
- Water District Trustees advises/oversees the Water District.

Public Water

The original system was constructed for the Bowdoinham Water District in 1959. It consists of a well and pump station located on a 9-acre parcel of land owned by the District adjacent to the West McIver Road on Lot 89 in Bowdoin, east of Route 201 and north of the junction of Route 201 and Route 138. A new pump station and treatment facility was completed in January 1999, which replaced the original pump house constructed in 1959. The 8-inch by 12-inch gravel packed well is 31 feet deep in an abandoned gravel pit.

System Storage -

There are two 125,000 gallon welded steel standpipes located on Preble Road, east of I-95. In 2005, a new concrete tank was built in Bowdoin, which added an additional 425,000 gallons of storage capacity. The combined tanks give the District a maximum capacity of 675,000 gallons.

Water Quality -

There have been no water quality problems. The water is disinfected through a hypochlorite feed system. Samples for bacteriological testing are submitted once a month and are negative. Annual tests for a whole range of chemicals all were found below the maximum contaminant levels in 1996. The samples for these tests were all taken at the well site. At the source there appeared to be no problems. However, due to the pH level of the water, there was a problem with copper leaching from domestic water lines. In January 1999, the District completed the construction of a new pump station that alleviated this problem through aeration.

Water Demand -

There are currently 259 service connections in Bowdoinham (most are residential, 12 are commercial, 5 are municipal). In Bowdoin, there are 23 service connections. For fire hydrants, see below. The water line extends to the village, Pleasant Street, Main Street, a portion of Millay Road, Post Road, Bay Road to the airport, River Road through one mile north on Brown Point and about ½ mile down Brown's Point Road. With the completion of the new pump station in January 1999, the District can now obtain accurate information about water usage in the District.

The average demand for three quarters in 1999 was 56,959 gallons per day. The average daily demand in 2011 was 43,159 gallons, a reduction of 24.2% since 1999.

A 1992 engineering study indicated limited supply and capacity. The 2000 Comprehensive Plan recommended that an updated study should be conducted. However, there have been no studies conducted on water capacity and supply since then.

Fire Protection -

There are 55 fire hydrants connected to the system - 47 in Bowdoinham and 8 in Bowdoin.

Organizational Structure-

The District was chartered in 1957 to provide water to Bowdoinham. The charter was amended in 1961 to allow service to any adjacent town. A five member Board of Trustees manage the District. The Select Board of Bowdoinham appoint all Trustees. The District's Charter requires that a majority of the Board of Trustees be residents of the Town of Bowdoinham.

The District's Superintendent, who is employed on a part-time basis, oversees operation and maintenance of the District. Billing, accounting, and office services are provided through a contractual arrangement with the Richmond Utilities District.

Note on Private Water Supply -

Approximately 79% of households are on private wells. There is only sporadic and rather unreliable data on private wells. Since there are no significant sand and gravel aquifers in Bowdoinham, most of the wells must draw from bedrock recharged wells. The only

regulation of well placement is in the Plumbing Code that wells and septic systems must be 100 feet apart.

Analyses

- (1) *Are municipal services adequate to meeting changes in population and demographics?*

In general, Bowdoinham has the capacity to provide basic and necessary municipal services to its citizens over the ten-year planning period. However, the Town should anticipate an increased demand for services for its growing elderly population including transportation needs, recreational and social activities, and the need for home-based services for the elderly to allow them to stay in their homes longer.

- (2) *Has the community partnered with neighboring communities to share services, reduce costs and/or improve services? In what ways?*

The following is a list of inter-municipal and regional efforts in which Bowdoinham participates:

- Emergency dispatch through the Sagadahoc County Regional Communications Center.
- Regional emergency and disaster planning through the Sagadahoc County Emergency Management Agency.
- Police protection through the Sagadahoc County Sheriff's Department.
- Fire and rescue participation in countywide mutual aid program, as well as mutual-aid agreements with Bowdoin, Richmond, and Topsham.
- Ambulance transportation is provided by Northeast Ambulance which also serves other communities in the area.
- Public education as a member of RSU/SAD 75, which serves Bowdoin, Bowdoinham, Harpswell and Topsham.
- Bowdoinham Water District, a quasi-municipal organization that serves areas within the Town of Bowdoin and the Town of Bowdoinham, and shares an office with the Richmond Utilities District in Richmond.

- (3) *If the community has a public sewer system, what issues or concerns are there currently and/or anticipated in the future? Is the sanitary district extension policy consistent with the Future Land Use Plan as required by (38 M.R.S.A. §1163), or will it be?*

Bowdoinham does not have a public sewer system. There is a concern about the significant number of small lots in the village area and the potential for groundwater contamination from on-site septic systems.

- (4) *If the community has a public water system are any public water supply expansions anticipated? If so, have suitable sources been identified and protected? Is the water district extension policy consistent with the Future Land Use Plan?*

The Water District anticipates no public water supply expansions for the ten-year planning period. The Water District follows the Maine Public Utilities Commission Chapter 65 extension rules.

- (5) *If the town does not have a public sewer or water system, is this preventing the community from accommodating current and projected growth?*

The lack of a public sewer system has and will continue to inhibit large-scale or higher density growth. Projected growth is modest based upon observed trends and assumes that sewer will remain unavailable during the ten-year planning period of this plan. The Town can accommodate the growth anticipated, predominantly residential, in the form of mostly single-family detached housing units. If multiunit development were sought, sewer or a community wastewater system would likely be needed, especially if such growth were to occur within the village area.

- (6) *Are existing stormwater management facilities adequately maintained? What improvements are needed? How might future development affect the existing system?*

The drainage system in Bowdoinham is a mix of public infrastructure installed over the years, and private stormwater management systems installed as part of subdivision and site plan regulated development. Ongoing maintenance is crucial for these systems to continue to function properly. Needed improvements include improved drainage ditches along Bay Road (state maintained) and on several town-maintained roads that will occur as pavement projects are completed over the the-year planning period. As part of routine road maintenance, the Town corrects drainage issues including replacing culverts and excavating roadside drainage ditches.

Without adequate stormwater management, the cumulative effect of small, piecemeal development (new buildings and impervious surfaces like parking lots), in addition to mid- and large-scale development, would threaten adjacent properties and roadways with increased flooding. Accordingly, the review of all projects through the Land Use Ordinance, its subdivision, shoreland zoning and site plan review provisions includes drainage standards. Improvements to public stormwater facilities that are needed because of development projects have a share of the cost for those improvements borne by the applicant. As well, State regulations for applicable projects address stormwater management.

- (7) *How do residents dispose of septic tank waste? Are there issues or concerns regarding septic tank waste?*

Property owners are responsible for the maintenance and disposal of their septic waste. The Town is aware of failing septic systems in some areas and works with property owners to address these issues on a case-by-case basis.

- (8) *Is school construction or expansion anticipated during the planning period? Are there opportunities to promote new residential development around existing and proposed schools?*

Given the decline in enrollments seen over the past decade, and the forecasted population increase in the adult population predominately, new school construction or expansion during the planning period is unlikely to be warranted in Bowdoinham.

Funding cuts, which have occurred chiefly at the State level, will dictate the amount of school improvements to be made over the planning period and may result in the closing of underutilized facilities. Regionalization of education has been promoted by the State to reduce education costs, especially administrative costs. The decisions on education spending will be made on a regional basis, not by any one municipality alone.

Under current Town ordinances, and with some undeveloped parcels nearby, new residential development is possible around the Bowdoinham Community School. This school is within the village area and within walking distance of village residences. Sidewalks were constructed in the village area in 2011 and 2012 on Cemetery Road, lower Ridge Road, River Road, Main Street, School Street and Bay Road. The village area is now served by sidewalks connecting the village with the public library, town office and Community School and recreation fields. See the Transportation Chapter and the Future Land Use Plan Chapter for more information.

- (9) *Is the community's emergency response system adequate? Are improvements needed?*

Bowdoinham's Fire Department and EMS are staffed mostly by volunteers who hold full-time or part-time jobs in other occupations or are retired. Maintaining adequate staffing levels is an ongoing concern. There are no needed facility improvements to existing buildings during the ten-year planning period. New or replacement vehicles (fire trucks and ambulances) anticipated to be needed during this same period include a rescue truck, an EMS first responder vehicle and a fire chief's truck. Fire Trucks are the most significant expenditure and they are replaced on a regular basis with funding from a reserve account and bonding.

- (10) *Is the solid waste management system meeting current needs? Is the community reducing the reliance on waste disposal and increasing recycling opportunities? Are improvements needed to meet future demand?*

Recycling has reduced the volume of waste in Bowdoinham. It is anticipated that the system's current capacity will be able to handle projected growth during the ten-year planning period. Nevertheless, these improvements are recommended to improve efficiency and reduce costs: the Town should purchase the current Recycling Barn and renovate the building for better efficiency in handling recyclable materials.

- (11) *Are improvements needed in the telecommunications and energy infrastructure?*

All businesses require basic public services. In the current economy, access to markets far beyond Bowdoinham is essential for many as well. Internet and telecommunications infrastructure in Bowdoinham is sufficient in some parts of the community but could be improved (as technology advances) and expanded to fill the current gaps in coverage and to increase internet speeds. Extensions/improvement of these services is sought in these areas: Brown's Point Road, Pork Point Road, River Road, Carding Machine Road, White Road, and roads that branch off these roads. The Town's Cable/Internet Advisory Committee has been working on expanding access to broadband internet services and is expecting to work with a provider to apply for a grant from the ConnectME Authority to expand service. See the Economy Chapter for more information.

- (12) *Are local and regional health care facilities and public health and social service programs adequate to meet the needs of the community?*

Health care is provided at a regional level through a clinic in Richmond and two hospitals in Brunswick. See the conditions and trends section below for more information. Locally, Bowdoinham EMS provides emergency response with additional assistance from Northeast Ambulance Service. The Town Health Officer, a registered nurse with a master's degree in public health advises residents on issues of local concern like vaccinations, pests, mold, and disposing of expired medications. In addition, there are several social service agencies that provide services to residents include Spectrum Generations, People Plus and KVCAP. The current arrangement works fairly well, however, additional needs may be necessary in the future for the elderly population of Bowdoinham as it increases over the next 10 years. These additional needs may include visiting nurses or in-home care.

- (13) *Will other public facilities, such as town offices, libraries, and cemeteries accommodate projected growth?*

The Town's public facilities, including the municipal building and fire station, recreation facilities, and the cemeteries generally have adequate capacity for the next ten-year period. Major capital needs identified include purchasing and renovating the Recycling Barn, and purchasing land and building a new garage and salt/sand storage facility for the Public Works Department. The most significant potential capital need is constructing a new Public Works Garage and salt/sand storage facility. See the Capital Investment Plan for a list of proposed projects.

- (14) *To what extent are investments in facility improvements directed to growth areas?*

Most public facilities (school, town office, public works, recreation fields, library) are located within the village area, which is a designated growth area, and so funding for their improvement, benefits the growth area. Public facilities not in growth areas include the Recycling Barn.

- (15) *Does the community have a street tree program?*

The Town does not have a formal street tree program. Public Works plants trees as requested by the Select Board and Town Manager. Since 2000, such work has occurred at the Maily Waterfront Park, on River Road at the Public Works Facility and on Center Street as part of a street reconstruction project.

Fiscal Capacity & Capital Investment Plan

Conditions and Trends

(1) *Identify community revenues and expenditures by category for the last five (5) years and explain trends.*

Total municipal revenues increased 18.1% over the last five years. Property and business equipment taxes comprised 83.3% of revenues in 2006 and increased to 87.3% of revenues in 2010. Intergovernmental revenue (State aid) decreased from 11.7% to 7.5% of total revenues during the same period. Most other sources of revenue increased in absolute terms but remained relatively constant as a percentage of total revenues.

General Fund Town Revenues for the years ending June 30th						
Categories	2006	2007	2008	2009	2010	Percent Change
Taxes	\$3,010,935	\$3,335,350	\$3,542,889	\$3,602,008	\$3,729,532	23.9%
Intergovernmental	\$422,805	\$353,594	\$394,034	\$387,352	\$319,538	-24.4%
Licenses, Permits, Fees	\$49,407	\$52,989	\$49,036	\$40,772	\$65,715	33.0%
Charges for Services	\$111,026	\$127,007	\$133,788	\$126,564	\$138,803	25.0%
Investment Income	\$15,862	\$23,466	\$19,472	\$26,366	\$5,800	-63.4%
Other	\$5,026	\$8,921	\$22,420	\$5,503	\$10,857	116.0%
Total	\$3,615,061	\$3,901,327	\$4,161,639	\$4,188,565	\$4,270,245	18.1%

Source: Financial Audit Reports prepared by Smith & Associates, CPAs

Notes: For 2006, 2007, 2008, 2009 and 2010: General Fund Statement of Revenues, Expenditures and Changes in Fund Balance: Actual Amounts.

Total expenditures increased 17.9% over the last five years. The largest single expense, education (over which municipal government has no control) increased 21.1% from 2006 to 2010, comprising 54.4% of total expenditures in 2006 and 55.8% of total expenditures in 2010. General government increased 11.2% over the same period, comprising 10.2% in 2006 and 9.6% of total expenditures in 2010. Public works and solid waste were placed in separate accounting categories after 2008, but when considered together, comprised 20.8% in 2006, and 18.1% of total expenditures in 2010.

General Fund Town Expenditures for the years ending June 30th						
Categories	2006	2007	2008	2009	2010	Percent Change
General Government	\$345,227	\$359,678	\$366,997	\$383,158	\$383,870	11.2%
Public Works, Maintenance	\$520,457	\$589,188	\$625,552	\$759,264	\$719,998	38.3%
Solid Waste	\$180,969	\$182,228	\$167,415	\$181,715	\$169,821	-6.2%
Protection, Public Safety	\$71,897	\$73,057	\$80,314	\$68,006	\$83,595	16.3%
Culture, Recreation	\$46,921	\$50,943	\$40,063	\$39,752	\$38,710	-17.5%
Public Health, Welfare	\$13,721	\$6,292	\$30,259	\$14,900	\$29,453	114.7%
Education	\$1,837,624	\$1,905,152	\$1,994,661	\$2,188,697	\$2,224,454	21.1%
Contingency	-	-	-	-	\$12,859	

General Fund Town Expenditures for the years ending June 30th						
Categories	2006	2007	2008	2009	2010	Percent Change
Debt Service, (in 2007: interest on long term debt, Depreciation –unallocated, capital outlay)	\$91,692	\$105,842	\$163,932	\$172,651	\$75,900	-17.2%
County Tax, Overlay	\$269,747	\$433,636	\$402,720	\$416,944	\$414,684	53.7%
Capital Outlay	-	\$10,998	-	-	-	
Total	\$3,378,255	\$3,717,014	\$3,871,913	\$4,043,372	\$3,983,523	17.9%
Excess (deficiency) of revenue	\$236,806	184,313	\$289,726	\$145,193	\$286,722	21.1%

Source: Financial Audit Reports prepared by Smith & Associates, CPAs, Town of Bowdoinham department accounting reports (QuickBooks, Trio Software)

Notes: For 2006, 2007, 2008, 2009 and 2010: General Fund Statement of Revenues, Expenditures and Changes in Fund Balance: Actual Amounts.

(2) Describe means of funding capital items (reserve funds, bonding, etc.) and identify any outside funding sources.

Capital investments are funded through capital reserve funds supported by property tax revenues town-wide as well as through tax increment financing district property tax revenues (pipeline), intergovernmental revenues (State aid), grants and loans from federal and state sources, and from municipal bonds. Non-governmental (outside) funding sources have recently included donations from local residents to construct a skate park and from the Stephen and Tabitha King Foundation towards the purchase of a new fire engine/pumper.

(3) Identify local and state valuations and local mil rates for the last five (5) years.

The local valuation of Bowdoinham increased 6% in the last five years. The certified assessment ratio was 0.913 in 2010. In 2011, it was 0.93.

Bowdoinham Local Valuations						
2007	2008	2009	2010	2011	Change	Percent Change
216,794,550	\$218,637,326	\$220,086,116	225,262,114	229,813,480	13,018,930	6.0%

Source: Town Annual Reports; Town tax assessment records

The State valuation of the Town increased 16.2% in the last five years.

Bowdoinham State Valuations						
2007	2008	2009	2010	2011	Change	Percent Change
\$229,900,000	\$251,050,000	\$260,600,000	\$267,450,000	\$267,200,000	\$37,300,000	16.2%

Source: Maine Revenue Services

The Town's mil (tax) rate increased 2.1% in the last five years.

Bowdoinham Mil Rates						
2007	2008	2009	2010	2011	Change	Percent Change
14.50	14.80	14.80	14.80	14.80	0.30	2.1%

Source: Town Annual Reports, Town tax assessment records

(4) How does total municipal debt (including shares of county, school and utility) compare with the statutory and Maine Bond Bank recommended limits on such debt?

Title 30-A MRSA Section 5702 contains a limitation on the amount of debt that municipalities may incur. A municipality cannot issue debt (for purposes other than school, storm or sanitary sewer, energy facility or for municipal airports) that would exceed 7.5% of the municipality's last full State valuation. The statute contains additional limits for school, storm or sanitary sewer, energy facility and for municipal airports. There is an overall debt limit for all types of debt of 15% of the municipality's last full State valuation. The Town has never exceeded the statutory limit.

The Maine Bond Bank has no set policy on the amount of total debt a municipality can or should have outstanding other than to be sure that the municipality is in compliance with the provisions of Maine law regarding limitations on local debt. The Maine Bond Bank looks at outstanding debt, both direct and contingent, from such perspectives as debt per capita, percentage of operating budget to debt service, and total debt among other factors.

Analysis

(1) How will future capital investments identified in the plan be funded?

Capital investments will continue to be funded through capital reserve funds supported by property tax revenues town-wide as well as through tax increment financing district property tax revenues (pipeline), intergovernmental revenues (State aid), grants and loans from federal, state and private sources, and from municipal bonds.

(2) If the community plans to borrow to pay for capital investments, does the community have sufficient borrowing capacity to obtain the necessary funds?

The community does have sufficient borrowing capacity. In fiscal year 2011, total municipal debt was .28% of the Town's last full State valuation, below the statutory limits (7.5% and 15%) as set forth in Title 30-A MRSA Section 5702.

(3) Have efforts been made by the community to participate in or explore sharing capital investments with neighboring communities? If so, what efforts have been made?

As noted in the Public Facilities and Services Chapter, the Town does cooperate with neighboring communities, multi-community quasi-municipal organizations and with Sagadahoc County in the provision of services (public education, police protection, fire department mutual aid, and the Bowdoinham Water District).

Capital Investment Plan

The comprehensive plan must include a capital investment plan that:

- (1) Identifies and summarizes anticipated capital investment needs within the planning period in order to implement the comprehensive plan, including estimated costs and timing, and identifies which are municipal growth-related capital investments;*
- (2) Establishes general funding priorities among the community capital investments; and*
- (3) Identifies potential funding sources and funding mechanisms.*

For (1) through (3), see the table below titled Bowdoinham Capital Investment Plan Summary 2014-2024.

Purpose and Definition

The purpose of a capital investment plan (CIP) is to establish a framework for financing needed capital investments. A CIP guides budgeting and expenditures of tax revenues and identifies needs for which alternative sources of funding such as loans, grants or gifts and donations will be sought.

Capital investments include the repair, renewal, replacement or purchase of capital items. Capital investments differ from operating expenses or consumables. The expense of consumables is ordinarily budgeted as operations. Capital investments generally have the following characteristics: they are relatively expensive (typically having an acquisition cost of \$5,000 or more); they usually do not recur annually; they last for years (often having a useful life of three or more years); and they result in fixed assets. Capital items can include equipment and machinery, buildings, real property, utilities and long-term contracts and are funded through the establishment of financial reserves.

Capital investments are prioritized each year in the budget process based on the availability of funds and the political will of the community. A complete CIP describes expected yearly investment and allows for both changes in priorities and reduction of available funds. The CIP is intended to prevent a large capital investment from occurring in a single fiscal year. The unexpected purchase of a sizeable investment can overburden the tax rate and cause large fluctuations in tax bills from year to year. The annual provision for eventual replacement of capital investments depends on the useful life of the capital investments. It is important that capital investments be financially accounted for each fiscal year, minimizing later expenses.

For the purposes of this plan, the total costs have been recognized with an indication of the expected period for each item that is desired based upon priority ratings. The Town is currently drafting a complete capital investment plan that will provide for a yearly allocation of available and applicable funds. Each year any necessary changes will be made to the CIP and it will be

included in the annual budget. Each year the Finance Advisory Committee will review the funding requests and make a recommendation for Select Board review.

Priority Rankings

The capital investments identified below were assigned a priority based on the listed ratings. Logically, “A” investments would be implemented prior to “B” and so on. Lower priority items may be funded ahead of schedule if higher priority items have already been funded or are prohibitively expensive, or if other sources of revenue (such as donated funds) become available. In order to fund capital investment projects it is necessary to begin to identify funding sources and set aside funds in advance of the projected time of funding.

- A. *Immediate need. A capital investment rated in this category would typically remedy a danger to public health, safety and welfare.*
- B. *Necessary, to be accomplished within two to five years. A capital investment rated in this category would typically correct deficiencies in an existing facility or service.*
- C. *Future investment or replacement, to be accomplished within five to ten years. A capital investment rated in this category would be desirable but is of no urgency. Funding would be flexible and there would be no immediate problem.*
- D. *Desirable, but not necessarily feasible within the ten year period of this Comprehensive Plan.*

Projects referenced in this Comprehensive Plan and existing reserve accounts are the basis for this capital investment plan and have been incorporated into the table below. As well, State and federal mandates necessitating some of these projects have been noted in the table. The need for each project is shown in parentheses.

Bowdoinham Capital Investment Plan Summary 2014-2024					
Comprehensive Plan Chapter/Town Dept.	Anticipated Item and (Need)	Estimated Cost	Priority	Responsible Party (ies)	Possible Funding Sources
Solid Waste & Recycling	Repairs/Upgrades to Recycling Barn; possible purchase of land and building	Repairs: \$40,000 Purchase: \$150,000 - \$200,000	A	Town Manager, Solid Waste Director, Select Board	Repairs: operating and/or CIP budget; purchase: borrowing
Public Works	Light Duty truck replacement (used vehicle)	\$6,000- \$10,000	A	Town Manager, Select Board	Operating budget
Public Works	Public Works Garage & Sand/Salt Storage Building	\$300,000 - \$400,000	B	Town Manager, Select Board	Borrowing and/or CIP budget
Public Works	Loader Purchase (JD 544K)	\$140,000	B	Town Manager, Select Board	CIP budget, borrowing

Bowdoinham Capital Investment Plan Summary 2014-2024					
Comprehensive Plan Chapter/Town Dept.	Anticipated Item and (Need)	Estimated Cost	Priority	Responsible Party (ies)	Possible Funding Sources
Public Works	Pick-up Truck Replacement (1997 GMC)	\$25,000	B	Town Manager, Select Board	CIP budget, borrowing
Public Works	Dump/Plow Truck Replacement (2001 International)	\$140,000	B	Town Manager, Select Board	CIP budget, borrowing
Public Works	Dump/Plow Truck Replacement (2002 International)	\$140,000	B	Town Manager, Select Board	CIP budget, borrowing
Public Works	Dump/Plow Truck Replacement (2005 International)	\$160,000	C	Town Manager, Select Board	CIP budget, borrowing
Public Works	Light Duty truck replacement	\$35,000	C	Town Manager, Select Board	Operating budget
Public Works	Re-paving – Wildes Road	\$100,500	B	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-paving – Abbagaddassett Rd	\$136,100	B	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-paving – Carding Machine Rd Section 1	\$101,000	B	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-paving – Back Hill Rd	\$44,000	B	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-paving – Pork Point Rd	\$267,000	B	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Carding Machine Rd, Section 2	\$195,000	B	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Ridge Rd, Section 4	\$150,000	B	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Fisher Rd	\$175,000	C	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Main St. (Lower)	\$40,000	C	Town Manager, Select Board	Borrowing, CIP Budget

Bowdoinham Capital Investment Plan Summary 2014-2024					
Comprehensive Plan Chapter/Town Dept.	Anticipated Item and (Need)	Estimated Cost	Priority	Responsible Party (ies)	Possible Funding Sources
Public Works	Re-Paving – Fisher Rd	\$182,000	C	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Ridge Rd, Section 2	\$140,000	C	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Millay Rd, Section 1	\$100,000	C	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Ridge Rd, section 5	\$150,000	C	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Church St	\$10,000	D	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Spear Drive	\$20,000	D	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Brown’s Point, Section 1	\$220,000	D	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – South Pleasant St	\$138,000	D	Town Manager, Select Board	Borrowing, CIP Budget
Public Works	Re-Paving – Brown’s Point, Section 2	\$133,000	D	Town Manager, Select Board	Borrowing, CIP Budget
Fire Department	Heavy Rescue Truck Replacement	\$100,000	B	Town Manager, Fire Chief, Select Board	Borrowing, grant funding
Fire Department	Re-pave parking lot & driveway	\$15,000	C	Town Manager, Fire Chief, Select Board	CIP Budget
Recreation Department	Skate Park Construction	\$60,000	B	Town Manager, Planning & Development Director	Grant funding and donations
Administration	Replace Server at Town Office	\$5,000	C	Town Manager, Select Board	CIP Budget

Bowdoinham Capital Investment Plan Summary 2014-2024					
Comprehensive Plan Chapter/Town Dept.	Anticipated Item and (Need)	Estimated Cost	Priority	Responsible Party (ies)	Possible Funding Sources
Administration	Reconfigure Office space in Town Office for customer and staff efficiency	\$15,000	B	Town Manager, Select Board	CIP and operating budget
Administration	Repaint Metal roof on Town Hall building	\$10,000	B	Town Manager, Select Board	CIP and operating budget
Administration	Upgrade Town Office HVAC system	\$20,000	B/C	Town Manager, Select Board	CIP and operating budget
Administration	Re-pave parking lot and driveway	\$15,000	C	Town Manager, Select Board	CIP and operating budget
Administration	Replace windows in Town Office Building	\$40,000	C	Town Manager, Select Board	CIP and operating budget
Administration	Replace carpeting in Town Office Building	\$10,000	C	Town Manager, Select Board	CIP and operating budget

Source: Town Manager

Land Use

Conditions & Trend

(1) *An existing land use map, by land use classification (such as mixed-use, residential, commercial, institutional, industrial, agricultural, commercial forests, marine, park/recreational, conserved, and undeveloped land).*

Existing land uses are shown on these three maps titled Aerial Photography, Land Cover, and Public Facilities and Services. Current land use districts are shown on the Official Land Use District Map and on the Official Shoreland Zoning Map.

According to the Census, the total area for Bowdoinham is 39.1 square miles (34.4 square miles of land and, 4.7 square miles of water). The next table shows the acreage and percent by land cover category. See the map titled Land Cover for the locations of these areas.

Land Cover in Bowdoinham		
Categories	Acres	Percent
Developed Land	418.6	1.7%
Cultivated Crops and Pasture/Hay	3,649.4	14.6%
Forest	13,968.3	55.7%
Grasslands/Herbaceous and Scrub/Shrub	346.9	1.4%
Wetlands and Wetland Forest	2,228.4	8.9%
Open Water	2,590.1	10.3%
Other	1,871.3	7.5%
Total Area (land and water)	25,073.0	100.0%

Source: Maine Land Cover Dataset

Note: The land cover data is based on 2004 SPOT imagery and 2001 LandSat data

The next table shows land owned by the Town or State, under conservation easements, enrolled in current use tax programs, or assessed as farmland or hayland. See the maps titled Public Facilities and Farmland/Hayland & Current Use Tax Programs for the locations of these parcels.

Bowdoinham: Town, State, Conservation, Tax Programs, Assessed for Farming/Haying		
Categories	Acres	Percent
Town-owned	94	0.4%
State-owned	1,537	6.1%
Conservation Easements	1,706	6.8%
Enrolled in Tree Growth Tax Program	2,621	10.5%
Enrolled in Open Space Tax Program	513	2.0%
Enrolled in Farmland Tax Program	2,548	10.2%
Assessed as Farmland	2,465	9.8%
Assessed as Hayland	2,110	8.4%
Total Land in Bowdoinham	22,016	87.8%
Total Area (land and water)	25,073	100.0%

Source: Town Assessor Data, 2011

Note: Individual parcels may be included in more than one category.

Accordingly, acreage figures should not be added together.

(2) A summary of current lot dimensional standards.

There is one town-wide district outside of the shoreland zoning districts. Its dimensional standards are shown in the next table.

Town-wide Land Use District Outside of the Shoreland Zoning Districts						
District	Minimum Lot Size	Front Setback	Side Setback	Rear Setback	Structure Coverage Limit	Road Frontage
Residential/Agricultural	43,560sf	50ft	10ft	10ft	20%	150ft

Source: Land Use Ordinance

Note: 43,560 square feet = 1 acre

Within the Shoreland Zone, the following dimensional standards apply for minimum lot size and shore frontage:

Shoreland Zoning Districts	Minimum Lot Area	Minimum Shore Frontage
Residential per dwelling unit	40,000 sf	200 ft
Governmental, Institutional, Commercial or Industrial per principal structure:		
- within the Shoreland Zone Adjacent to Tidal Areas, Exclusive of Those Areas Zoned for Commercial Fisheries and Maritime Activities	40,000 sf	200 ft
- within the Shoreland Zone Adjacent to Tidal Areas Zoned for Commercial Fisheries and Maritime Activities	None	None
- within the Shoreland Zone Adjacent to Non-tidal Areas	60,000 sf	300 ft
Public and Private Recreational Facilities Within the Shoreland Zone Adjacent to Tidal and Non-Tidal Areas	40,000 sf	200 ft

Source: Land Use Ordinance

Notes:

- Land below the normal high-water line of a water body or upland edge of a freshwater or coastal wetland and land beneath rights-of-way and/or easements serving more than two (2) lots shall not be included toward calculating minimum lot area.
- Lots located on opposite sides of a public or private road shall be considered each a separate tract or parcel of land unless such road was established by the owner of land on both sides thereof after September 22, 1971.
- The minimum width of any portion of any lot within one hundred (100) feet, horizontal distance, of the normal high-water line of a water body or upland edge of a freshwater or coastal wetland shall be equal to or greater than the shore frontage requirement for a lot with the proposed use.
- If more than one residential dwelling unit, principal governmental, institutional, commercial or industrial structure or use, or combination thereof, is constructed or established on a single

parcel, all dimensional requirements shall be met for each additional dwelling unit, principal structure, or use.

- A cluster subdivision may be allowed as permitted in the underlying district provided that the overall dimensional requirements, including frontage and lot area per dwelling unit, are met. When determining whether dimensional requirements are met, only land area within the shoreland zone shall be considered.

Dimensional minimum setbacks standards for principal and accessory structures, as measured horizontal distance, from the normal high-water line of water bodies, streams, or the upland edge of a coastal or freshwater wetland, are shown in the next table.

Shoreland Zoning Districts	Shore minimum setbacks for principal and accessory structures
General Development II, Limited Commercial, Limited Residential, Stream Protection	100ft
General Development I	25ft
Marine (Commercial Fisheries/Maritime Activities)	None
Resource Protection	250ft*

Source: Land Use Ordinance

Note: *Except for structures, roads, parking spaces or other regulated objects specifically allowed in that district in which case the setback requirements specified above shall apply.

Dimensional lot area coverage standards are shown in the next table.

Shoreland Zoning Districts	Maximum Lot Area Coverage within Shoreland Zone (Impervious Surface)
Limited Commercial, Limited Residential, Stream Protection, Resource Protection	20%
General Development (Both I and II) adjacent to tidal waters and rivers	70%
Marine Commercial Fisheries/Maritime Activities	70%

Source: Land Use Ordinance

Height limits for principal or accessory structures and expansions of existing structures in these shoreland zone districts: Resource Protection, Limited Residential, Limited Commercial, and Stream Protection Districts, shall not exceed 35 feet. This limitation does not apply to structures such as transmission towers, windmills, antennas, and similar structures having no floor area.

- (3) *A description or map identifying the location of lots and primary structures created within the last ten years. Include residential, institutional, commercial, and industrial development.*

Most development within Bowdoinham from 2001 to 2011 has consisted of single-family detached residential dwellings.

The next table shows the number of units and structures built from 2001 to 2011 by category.

Development in Bowdoinham 2001-2011	
Categories	# of Structures Built
Residential Structures (Housing Units)	
Institutional Structures (Education Government Related)	2
Commercial Structures	1
Industrial Structures	0

Source: Planning Department, Assessor Records

Note: Residential development during this period was --- single-family detached residential.

From 2001 to 2011, there have not been any multi-unit developments in Bowdoinham. Only five (5) residential subdivisions totaling --- new house lots have been approved since 2001, of which four (4) included land set aside for conservation. Commercial and industrial development has mostly been small-scale, home based businesses or redevelopment. There have been no office parks/industrial parks developed in Town since 2001.

Subdivision provisions (Land Use Ordinance Appendix 4: Four-Step Design Process) were adopted to require an open space set aside of 25% of net residential area for subdivisions created after 6/10/2009. This has been applied in 3 subdivisions, resulting in --- acres of open space.

- (4) *Provide a brief description of existing land use regulations and other tools utilized to manage land use, including shoreland zoning, floodplain management, subdivision, site plan review, and zoning ordinances.*

Bowdoinham’s existing land use regulations consist of the Land Use Ordinance most recently amended in 2012. This ordinance includes overall performance standards, land use (zoning), shoreland zoning, floodplain management, subdivision, site plan review provisions, administration, enforcement, penalties, and appeals.

See the response to question #2 above for information on zoning districts and see the Land Use Ordinance itself for a description of permitted uses within each district. With the exception of the Marine (Commercial Fisheries/Maritime Activities) District and the Resource Protection District, districts within Bowdoinham allow for mixed-use development, with the lowest or no impact uses allowed without a permit. Those uses with low to moderate potential impacts require a permit from the Road Commissioner or Code Enforcement Officer/Licensed Plumbing Inspector, as dictated by State law and/or as defined in the Land Use Ordinance. Uses with potentially moderate or greater impacts require planning board permits and/or site plan review permits. For purposes of site plan review, based upon scale and use, proposed projects are classified as Tier I, II, III, or as an Amendment.

Overall Land Use Ordinance performance standards (requirements) regulate the following in Bowdoinham:

Land Use Ordinance Performance Standards (Article 4)	
Access management (driveways/entrances)	Signs
Back lots	Temporary buildings
Erosion and sedimentation control	Timber harvesting
Home occupation	Vernal pools
Lighting	Water quality protection
Road standards	Wind mills
Subsurface wastewater disposal	

Source: Land Use Ordinance

Performance standards for development and activities in shoreland zoning districts are listed in the next table.

Shoreland Zoning Performance Standards* (Article 7)	
Piers, Docks, Wharves, Bridges and Other Structures and Uses Extending Over or Below the Normal High-Water Line of a Water Body or Within a Wetland	Septic Waste Disposal
	Essential Services
	Mineral Exploration and Extraction
Campgrounds	Agriculture
Individual Private Campsites	Timber Harvesting
Commercial and Industrial Use	Clearing or Removal of Vegetation for Activities Other Than Timber Harvesting
Parking Areas	Erosion and Sedimentation Control
Roads and Driveways	Soils
Stream Crossings	Water Quality
Signs	Archaeological Site
Storm Water Runoff	Marinas

Source: Land Use Ordinance

Note: *Minimum Lot Standards and Principal and Accessory Structures Standards are not shown in this summary table. They are referenced in the response to question #2.

Performance standards for development and activities within flood zones as delineated by FEMA are listed in the next table.

Floodplain Management Development Performance Standards (Article 8)	
Construction Standards	Recreational Vehicles
Water Supply	Accessory Structures
On Site Waste Disposal Systems	Floodways
Watercourse Carrying Capacity	Enclosed Areas Below the Lowest Floor
Residential	Bridges
Non Residential	Containment Walls
Manufactured Housing	Wharves, Piers and Docks

Source: Land Use Ordinance

Performance standards and design guidelines for subdivisions are listed in the next table.

Subdivision Performance Standards and Design Standards (Article 9)	
Vehicular Access	Historic and Archaeological
Traffic	Groundwater
Visual Impact	Wildlife Habitat
Utilities	Natural Areas
Water Supply	Open Space
Sewage Disposal	Solid Waste Management
Fire Protection	Air Quality
Financial Capacity	Stormwater
Technical Ability	Sedimentation and Erosion Control
Shoreland (cross-reference to Article 7)	Compliance with Ordinances
Floodplain (cross-reference to Article 8)	Spaghetti-lots
Wetlands and Waterbodies	Liquidation Harvesting

Source: Land Use Ordinance

Performance standards for projects that are regulated by site plan review are listed in the next table.

Site Plan Review Performance Standards (Article 10)	
General Performance Standards	Use-Specific Performance Standards
Vehicular Access	Asphalt/Concrete Plant/Fabrication
Internal Vehicular Circulation	Automobile Graveyard & Junkyard
Pedestrian Circulation	Automobile Service Station
Municipal Services	Bank/Financial Institution
Visual Impact	Bed & Breakfast
Lighting	Boarding House
Signage	Campground
Buildings	Daycare, Center
Landscaping	Daycare, Home
Buffering	Distribution Center
Utilities	Dog Kennels
Water Supply	Food Processing
Sewage Disposal	Gravel Pit
Fire Protection	Home-Based Business
Capacity of Applicant	Hotel, Motel, & Inn
Special Resources	Manufactured Housing Park
Historic & Archaeological	Non-Roadside or Cross-Country Distribution Lines (greater than 34.5kV)
Groundwater	Restaurant
Wildlife Habitat	Retail
Natural Areas	Self-Storage Facility
Environmental Impact	Telecommunication Tower
Solid Waste Management	Warehouse

Site Plan Review Performance Standards (Article 10)	
General Performance Standards	Use-Specific Performance Standards
Hazardous, Special & Radioactive Materials	Wood Processing Facility
Air Quality	
Water Quality	
Stormwater	
Sedimentation & Erosion Control	
Noise	

Source: Land Use Ordinance

For a description of Land Use Ordinance provisions covering natural resources, see the Natural Resources Chapter, Water Resources Chapter and Marine Resources Chapter. For a description of Land Use Ordinance provisions covering roads, driveways, entrances, sidewalks, parking lots and related facilities, see the Transportation Chapter.

- (5) *Estimate the minimum amount of land needed to accommodate projected residential, institutional, commercial, or industrial development at least ten (10) years into the future.*

For planning purposes, the 2024 housing unit count is forecast to total 1,393 units. At the current minimum lot size and maximum housing density, the projected new housing (114 units) would require 114 acres of buildable lots. If this housing were part of new subdivisions, the land for new roadways and other infrastructure could total up to 17 acres through traditional subdivisions, or 8 acres with cluster/conservation subdivisions. Since 2001, there has been little demand for commercial or industrial development. Similar trends are likely, with an anticipated demand of 50 acres for future commercial and industrial development in the next ten years.

Analysis of Current Land Use

- (1) *Is most of the recent development occurring: lot by lot; in subdivisions; or in planned developments? Is recent development consistent with the community’s vision?*

Most recent development in Bowdoinham has consisted of single-family, detached residential units constructed on a lot-by-lot basis town-wide. New house lots have principally been created along existing public roads as opposed to being served by newly constructed subdivision roads.

Development trends have in general been consistent with the community’s vision statement adopted in 2011, an excerpt of which states, “Bowdoinham’s country roads continue to be lined with scattered houses, fields, forests and small businesses. New development and stores are in keeping with local and historic character.”

- (2) *What regulatory and non-regulatory measures would help promote development of a character, and in locations that are consistent with the community’s vision?*

The Town could adopt a village district in the Land Use Ordinance to achieve the community’s vision for this area, including consideration for the most desirable uses, lot sizes, the scale (size) of development sought, and design standards. To improve environmental quality and property

values, the Town could adopt additional low impact development standards in the Land Use Ordinance. Such provisions would further limit stormwater runoff from new development, which in turn would lessen the potential for flooding on adjacent properties (both public and private) and on roadways. These provisions would also reduce the pollution of nearby wetlands (groundwater recharge areas), and waterways. See the Future Land Use Plan for more information.

Non-regulatory measures to promote the Town's vision statement would include the continued prioritizing of public improvements sought for the village area. These improvements could be funded through the already established tax increment financing district, and through grants and private donations. Likewise, Town support for community groups to promote businesses within the Town as a whole and within the village area specifically could help to rejuvenate the local economy and expand the employment opportunities of Bowdoinham residents. See the Economy Chapter for more information.

Private landowners can continue to be encouraged to consider placing portions of their properties in conservation easements for agriculture, forestry, recreational activities, and for natural resource protection outside of the village area. The Town can continue to facilitate the activities of land trusts in these pursuits as well. See the Agriculture and Forestry Chapter and the Natural Resources Chapter for more information.

- (3) *Is the community's administrative capacity adequate to manage its land use regulation program, including planning board and code enforcement officer?*

Administrative capacity is adequate currently; however as development increases staff levels may also have to increase. Ongoing training for the citizen-staffed volunteer Planning Board and Board of Appeals will be necessary, regardless of changes to municipal ordinances, in order to continue to ensure civil rights protections (due process) for applicants and citizens. This training is necessary because of the complexity of State statutory requirements, which are subject to change.

- (4) *Are floodplains adequately identified and protected? Does the community participate in the National Flood Insurance Program? If not, should it? If so, is the floodplain management ordinance up to date and consistently enforced? Is the floodplain management ordinance consistent with state and federal standards?*

Floodplains are identified on FEMA-issued Flood Insurance Rate Maps (FIRM) (ID 2301190015C), effective date 11/19/1997 for Bowdoinham. It is believed these accurately show areas subject to flooding (100-year and 500-year flood events). See the map titled Hurricane Surge Inundation for areas prone to flooding from storms (Hurricane Categories 1-4), which includes areas beyond those shown on the FEMA FIRMs. The Town participates in the National Flood Insurance Program. Floodplain management provisions within the Land Use Ordinance were last amended in 2009. These provisions are consistent with State and federal standards and are consistently enforced.

Analysis of Future Land Use Plan

(1) Does the Future Land Use Plan align and/or conflict with the community's vision statement?

The Future Land Use Plan is aligned with the vision statement.

(2) Is the configuration of the growth area(s) shaped by natural opportunities and/or constraints (i.e. the physical suitability or unsuitability of land for development)? The location of public facilities? The transportation network?

The configuration of the growth area was created based on location: of our historic village, the highway interchange, public facilities and existing development. Shoreland Zoning and Floodplain Management will continue to impact new development in the growth area.

(3) How does the Future Land Use Plan relate to recent development trends?

Bowdoinham's development trend has consisted of single-family homes and home-based businesses throughout Town. One of the goals of the Future Land Use Plan is to encourage new development in the growth area.

(4) Given current regulations, development trends, and population projections, estimate how many new residential units and how much commercial, institutional, and/or industrial development will likely occur in the planning period? Where is this development likely to go?

In the next ten years we can expect another 50 to 75 new homes and 10-15 new businesses. Over the last ten years, less than 10% of our new development occurred in the growth area. In order to encourage new development to locate in our growth area, new standards/regulations are needed.

(5) How can critical natural resources and important natural resources be effectively protected from future development impacts?

New development will have to continue to meet the standards of the Town's Land Use Ordinance, which includes Shoreland Zoning, Floodplain Management, Site Plan Review and Subdivision, as well as any applicable State and Federal regulations.

Sea-Level Rise & Climate Change

This section was prepared by JT Lockman, Catalysis Adaptation Partners, LLC, for the Town of Bowdoinham through a grant from the Maine Coastal Program, funding provided by National Oceanic and Atmospheric Administration, U.S. Department of Commerce. Peter Slovinsky, Marine Geologist for Maine Geological Survey, Department of Agriculture, Conservation and Forestry created the data and maps showing the potential effects of sea level rise in Bowdoinham.

Inventory

Introduction

Sea level is rising according to one hundred years of records from the Portland, ME tide gauge. Along with this change, storms are becoming more frequent and intense, and damages are increasing. The important question for the Town of Bowdoinham is: “How should the Town respond and adapt?” This chapter inventories the best available data on historical and recent trends in sea level change, and offers the best available current predictions for the future. This Chapter establishes the rational basis on which the Town’s policy response to sea level rise is based.

This chapter does not delve into the underlying causes of the observed changes in sea level. The underlying causes of sea level rise are being debated nationally and internationally, and are the subject of extensive scholarly investigation worldwide. This chapter simply acknowledges the sea level changes as documented over the past century at the Portland tide gauge and other gauges in Maine and along the east coast. Whether the cause is man-made or natural or a combination of both is irrelevant. Whatever the cause may be, it is important for the Town to react to changing physical conditions in order to minimize negative impacts to our health, safety, economy, and environment.

1. Trends in Sea Level Rise

As shown in this section, there is a clear historical pattern of sea level rise which began about 11,000 years ago and which is still occurring today. For the past couple thousand years there has been a pattern of only minor, gradual increases in sea level, although the most recent data appears to be showing an increasing rate of sea level rise.

Scientists believe that there are two dominant components to what is happening when global sea level is observed to increase. The first is thermal expansion, as the ocean temperature warms. The second is volumetric increase when the volume of water in the ocean increases, caused by melting glaciers and ice sheets located on land.

When scientists look at data on a specific piece of coast, like at the shoreline of Bowdoinham, Maine, there are some local reasons for changes in sea level, other than those at the global level.

Some movement of the land up or down is left over from the end of the last ice age. As the crust of the earth in this area was covered with thousands of feet of ice, it sank in response, just like when you lie down on a mattress. As the ice receded while the ice age ended, the land experienced “isostatic rebound,” as the crust bounced back up. Some isostatic rebound is still happening today after thousands of years, but the effect now is very slight. However, in the past, this phenomenon had a tremendous effect on Maine. In other parts of the United States, there was no ice age, and sinking of the land or “subsidence” is a problem. This is pronounced in the Chesapeake Bay area and the Louisiana coast, where higher rates of sea level rise are happening right now, compared to Bowdoinham, Maine.

Thirteen thousand years ago at the end of the last ice age, the land in Maine was so crushed by ice that sea level was 230 feet (70 meters) higher than it is today. At eleven thousand years ago after the ice had receded, the land rebounded so that sea level was about 200 feet (60 meters) below today’s levels. Continued melting of ice filled the oceans, and in the last five thousand years, levels in Maine have been very stable. It is important to note that this is the period when our modern beaches and wetlands that we know today were formed. See Figure 1.

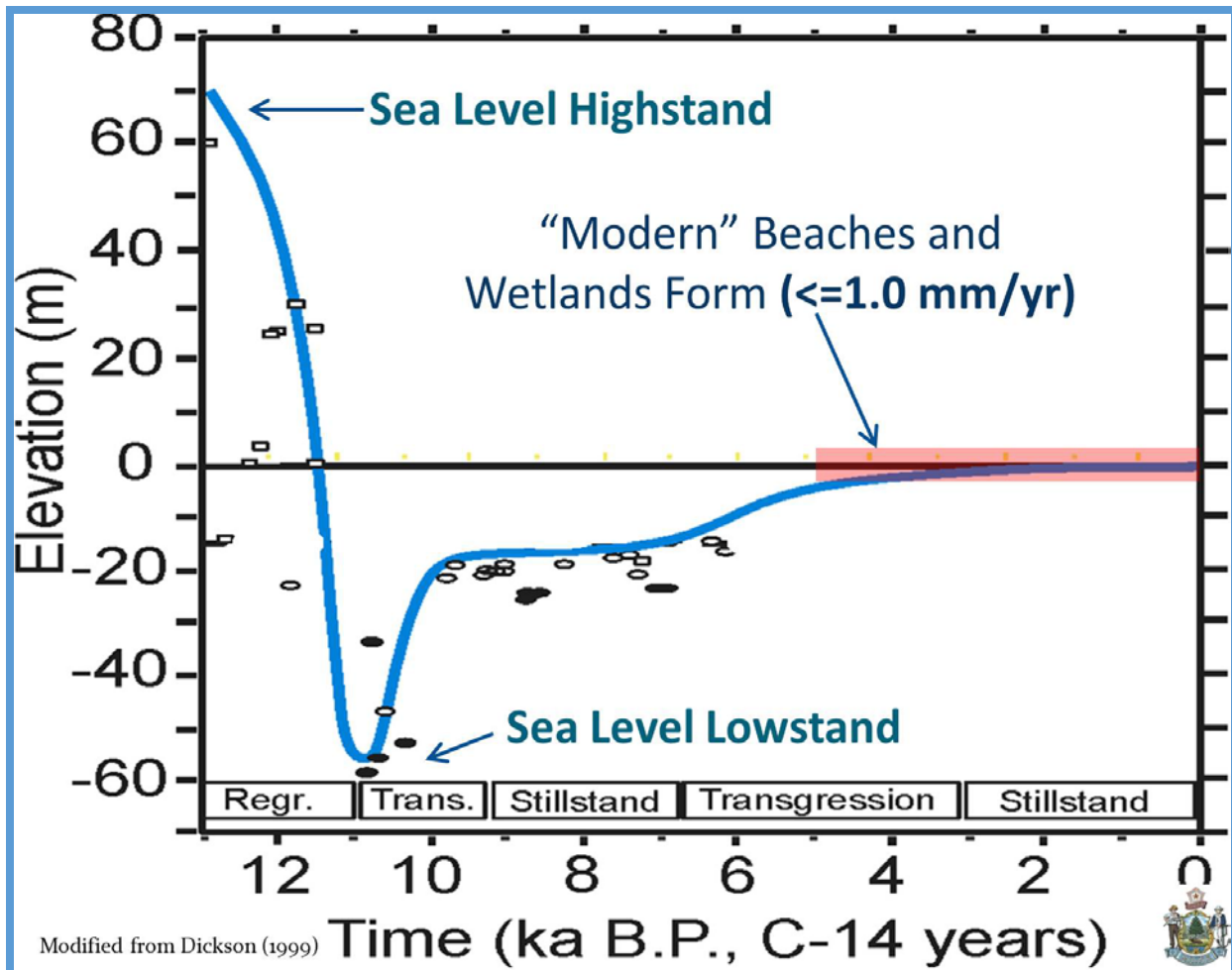


Figure 1: Elevation of Sea Level in Maine – 13,000 Years Ago to Present

Studies of marshes in Wells show that in the last five thousand years (the area shaded in red in figure 1) the rate of change in sea level has leveled off from over 3/64 inch (1mm) per year to only 1/64 inch (0.2 mm) per year about a thousand years ago. This data was derived by radiocarbon dating of marsh borings. See Figure 2.

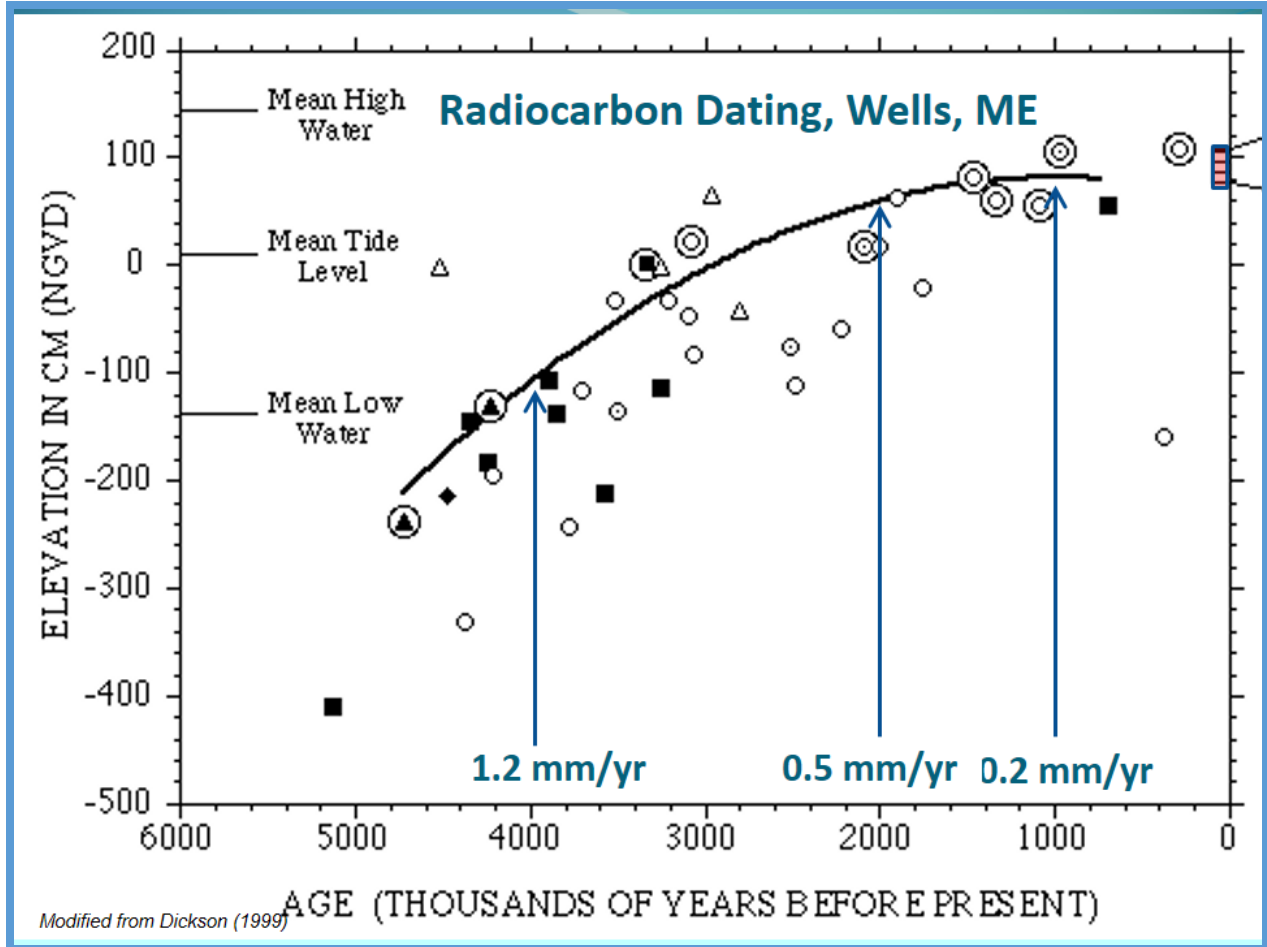


Figure 2: Sea Level Change in Wells, ME – 5,000 Years Ago to Present

The peaceful period of gradual sea level rise that has been experienced for the past several thousand years appears to be over. The Portland tide gauge shows that over the last hundred years, since 1912, sea level has been rising at a rate of 1.9 mm per year. That would be 7½ inches (190 mm) during this period. This mirrors global ocean changes, as measured from orbiting satellites, of about 5/64 inch (1.8 mm) per year. See Figure 3.

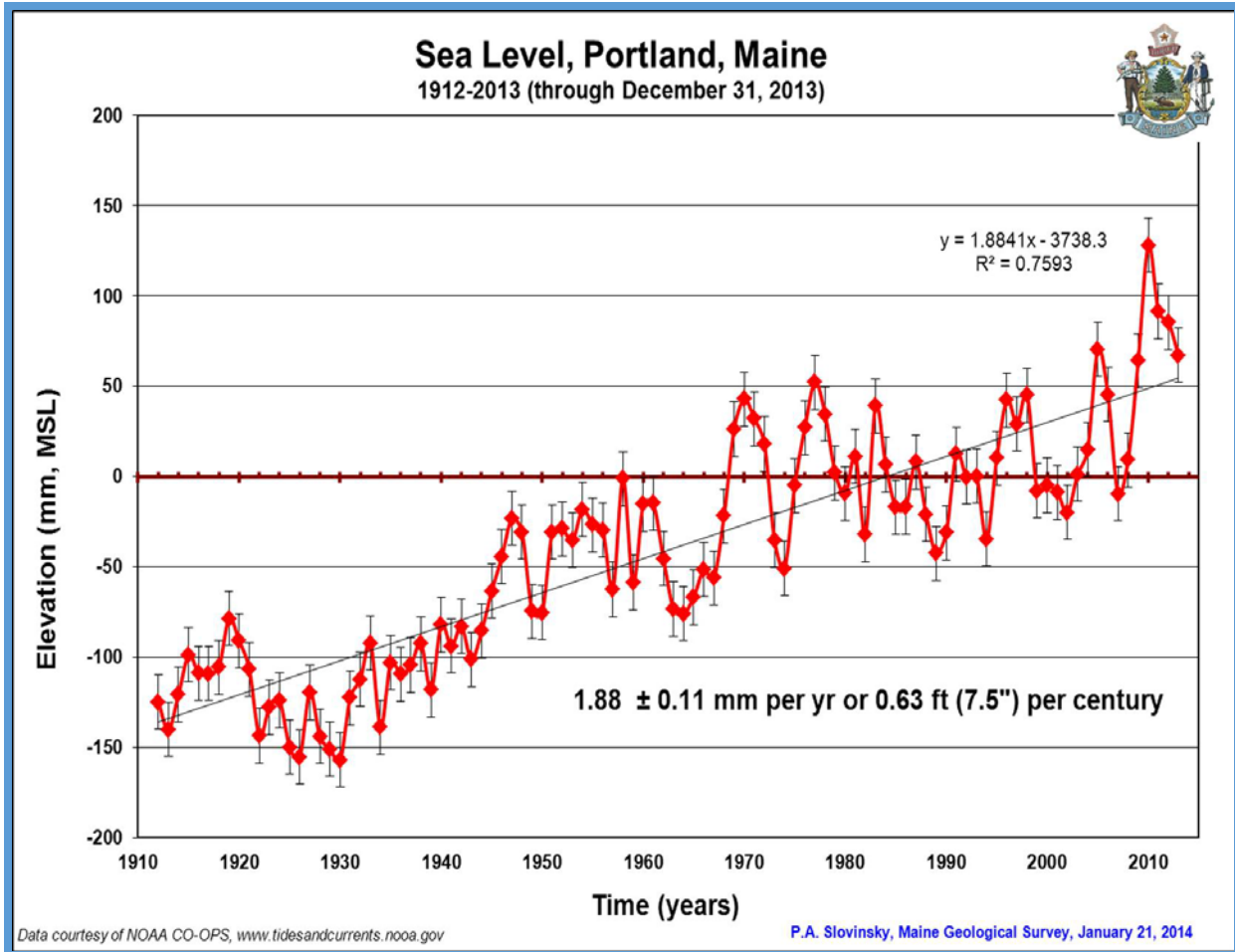


Figure 3 – Portland Tide Gauge – Mean Sea Level – 1912 to 2013

Similar results are found up and down the coast, as documented at nearby tide gauges. The rates of increase in sea level rise go up slightly as you move east along the coast, from Kittery to Eastport. See Figure 4.

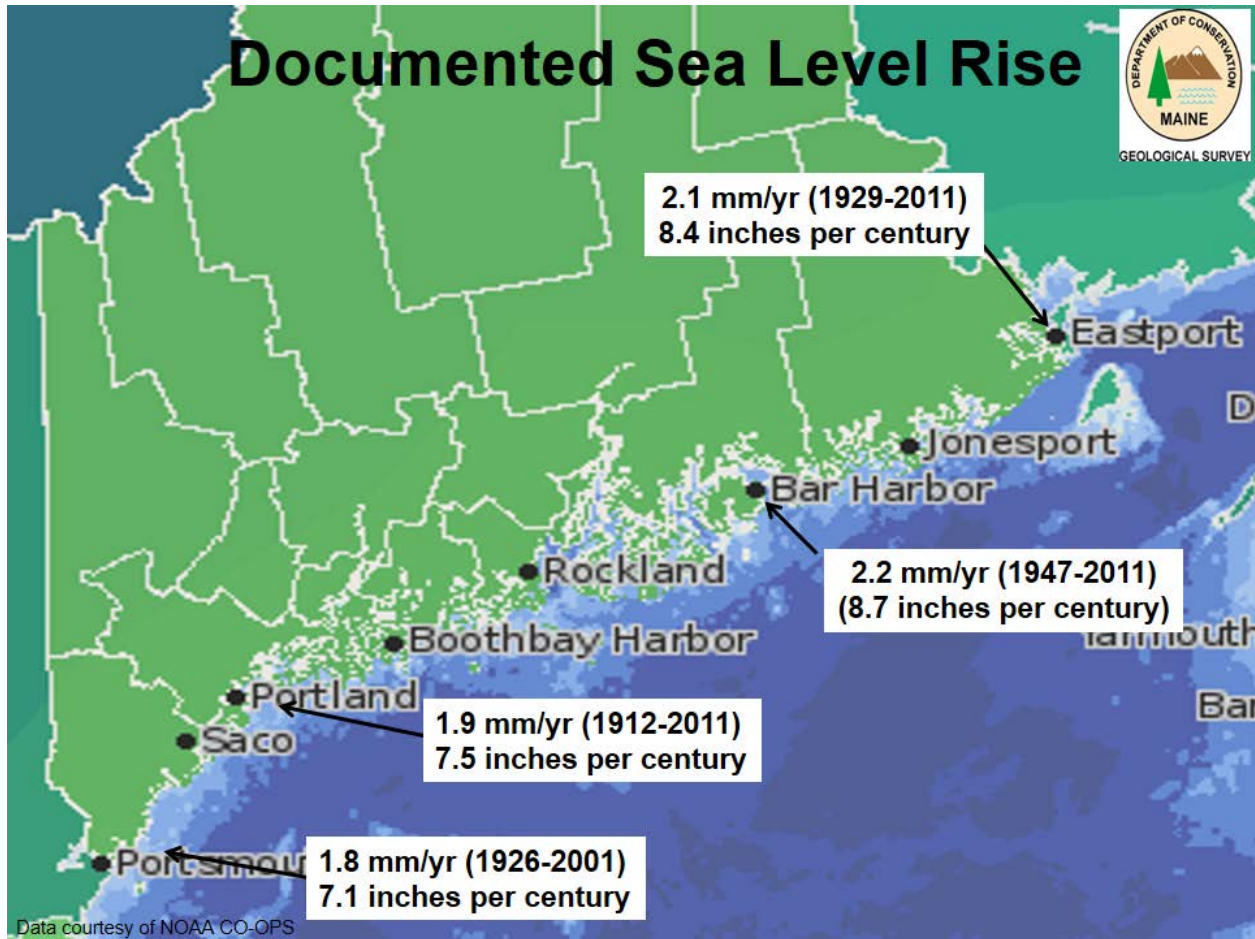


Figure 4 – Recent Rates of Sea Level Rise – Portsmouth to Eastport

Not only has the pace of sea level rise picked up over the last hundred years, the rate is increasing, and is up substantially since 1993. For the last 20 years or so, the rate of sea level rise in Portland has increased to 11/64 inch (4.4 mm) per year, or 17.2 inches (435 mm) per century. See Figure 5.

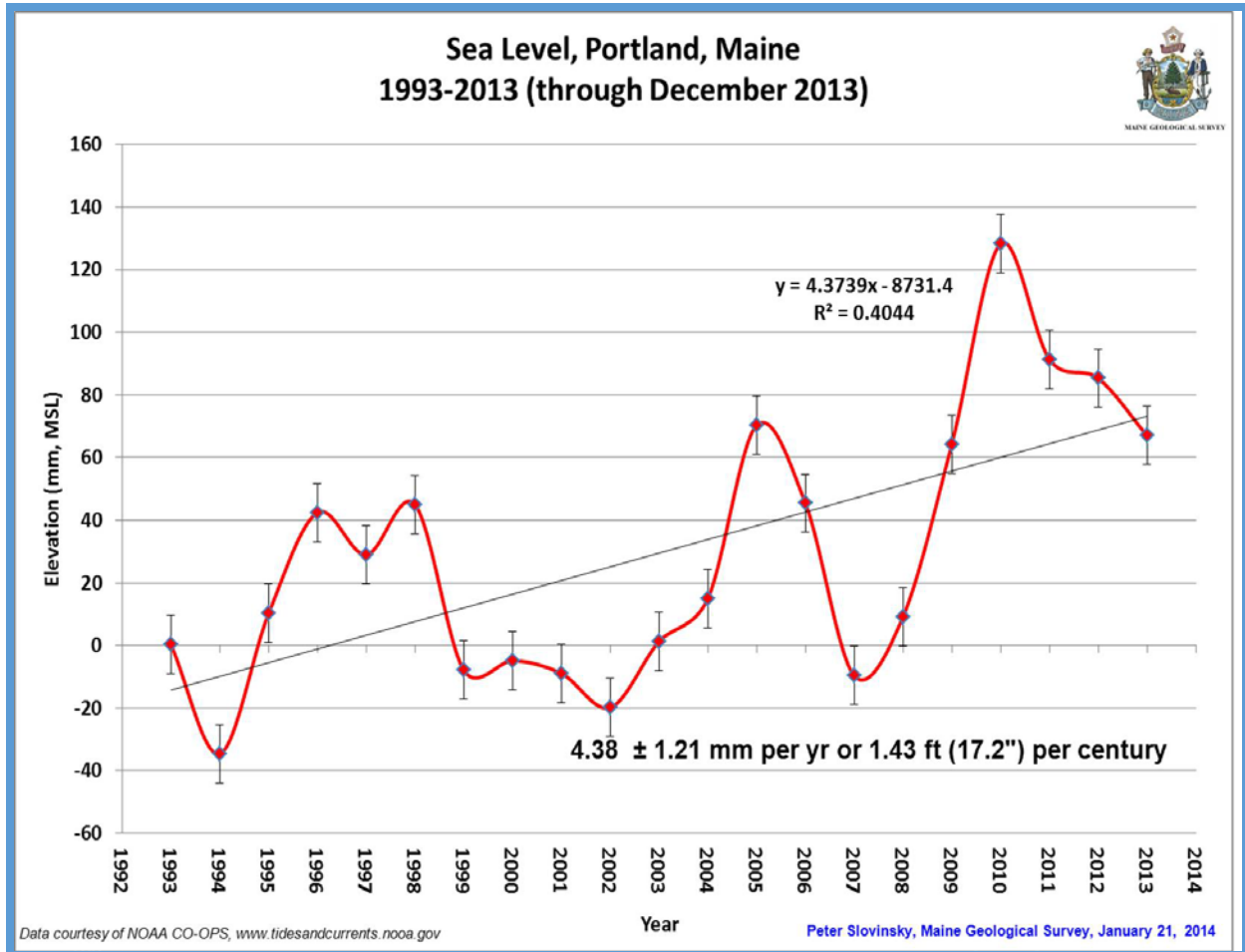


Figure 5 – Portland Tide Gauge – Mean Sea Level – 1993 to 2013

This uptick in sea level rise over the last 20 years or so, is not only happening in Portland, Maine. Satellite measurements of the global ocean level over the same period show that high tide levels have been increasing at a rate of 3.2 mm per year, across our entire planet, since 1993. See Figure 6.

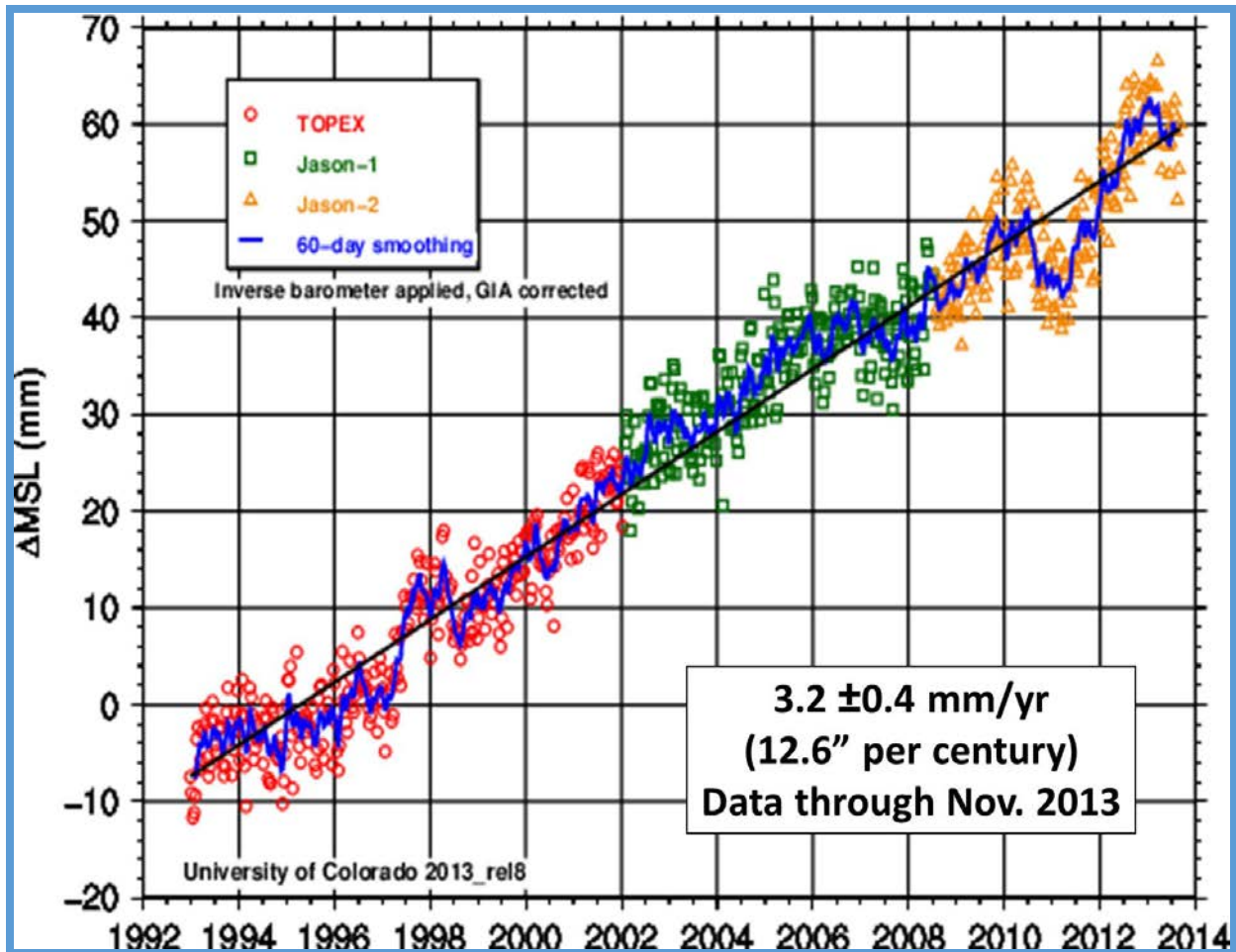


Figure 6 – Global Rates of Sea Level Rise

2. Best Predictions of Future Sea Level Rise

Having an overall understanding of past changes to sea level is essential to understanding the range of projections of future conditions. There is widespread consensus in the science community that sea level will continue to rise in the coming century. Nobody can know today exactly how much sea level rise will actually prove true by any given point in time in the future. A rising sea level has planning implications for coastal communities like Bowdoinham, regardless of any uncertainty about the amounts in these predictions. Some buildings, roads and public facilities will be impacted on a daily basis or during storms where overall rising sea levels will worsen storm-related impacts. While the degree of certainty is unknown, it is nonetheless important to gaze into the crystal ball and consider the range of likely alternatives.

For many years, the Sand Dune Act and Coastal Sand Dune Rules administered by the Maine Department of Environmental Protection, have required that beachfront property owners located within certain designated areas of the sand dunes, design their structures expecting 2 feet (0.6 M) of sea level rise by 2100. This amount of sea level rise projected in these Maine DEP rules tracks

the “middle of the road” prediction from the Intergovernmental Panel on Climate Change (IPCC) of 2 feet (0.6 m) by 2100. The amount of sea level rise in the last 100 years since 1912 has been about 7.5 inches (190 mm). The next hundred years will probably be triple that, according to the IPCC and reach at least two feet. These IPCC projections do not include contributions from the melting of glacial, land-based ice sheets.

However, Figure 7 shows that if you superimpose the Portland tide gauge data from 1993 to the present, as well as the satellite measurements of the global ocean level, that sea level rise during the last 20 years is tracking the HIGHEST PROJECTION curve of the IPCC from 2001. In this recent period, we have not been following the 2001 “middle of the road” predictions. The topmost, upper lavender dotted line on the graph below, shows the very highest prediction of the sea level rise rate from the IPCC. Satellite measurements since 1993 clearly show that global ocean levels are tracking this highest rate. (The lavender shaded area in the graph shows the middle range of projections, which are clearly being exceeded.)

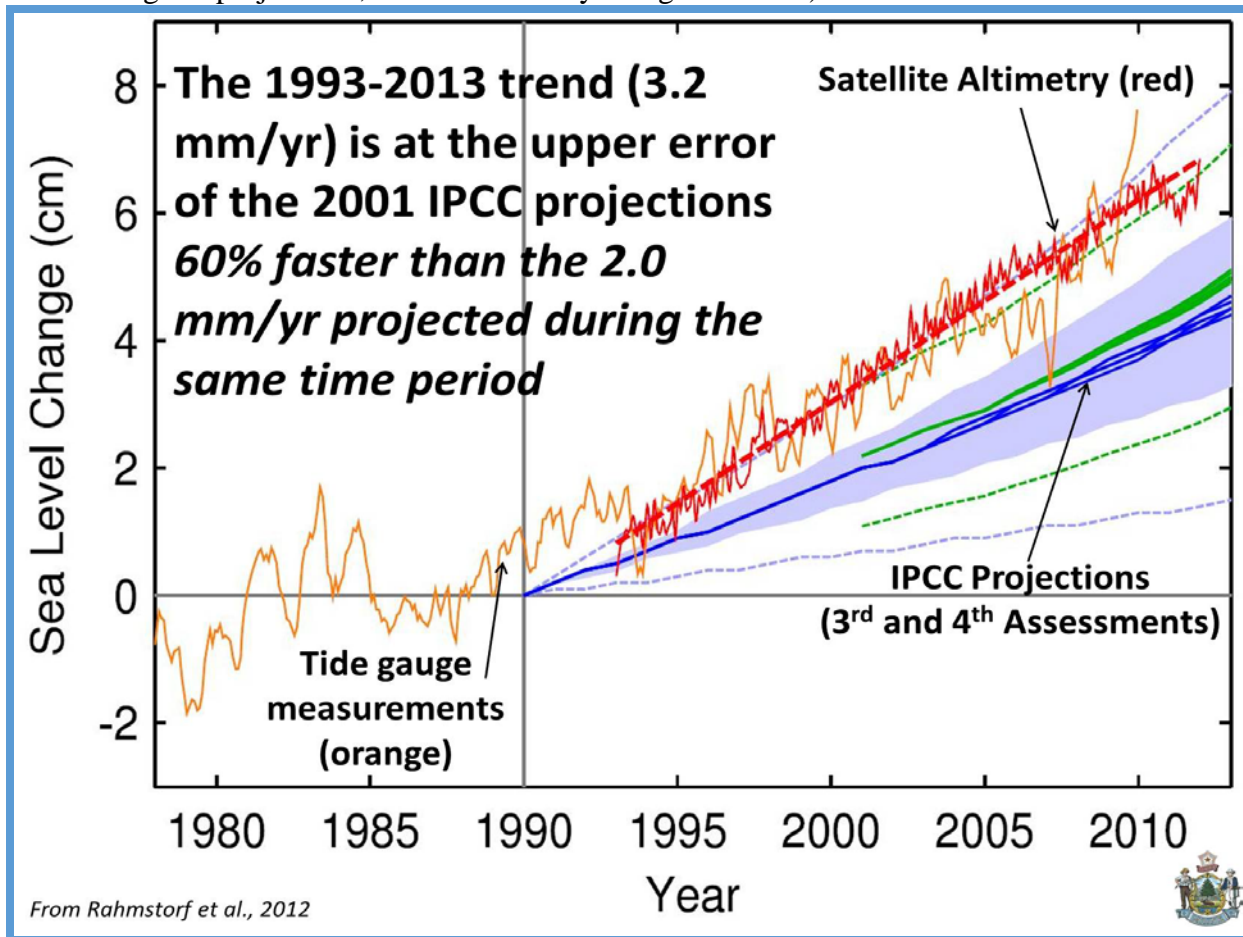


Figure 7: Recent Sea Level Rise Observed Data Compared to Past Predictions

There is another factor at work, which should be considered by the Town of Bowdoinham, which makes the predictions of at least one foot (0.3 M) of sea level rise by 2050, and 2 feet 0.6 M) of sea level rise by 2100, good solid numbers when considering adaptation. Geologists are measuring that ice sheets on land in Greenland and the Antarctic are melting, which could add substantial amounts of water to the world’s oceans. This has not been a factor over the past hundred years. The recent SWIPA report (Snow, Water, Ice, and Permafrost in the Arctic) by

Rignot and Others, from March 2011, predicts that “if the current Antarctic and Greenland ice sheet melting rates continue for the next four decades, their cumulative loss could raise sea level by 5.9 inches (150 mm) by 2050. When this is added to the predicted sea level contribution of 3.1 inches (79 mm) from glacial ice caps and 3.5 inches (89 mm) from ocean thermal expansion, total sea level rise could reach 12.6 inches (320 mm) by the year 2050.” (More information is available from the American Geophysical Union, via the Web: <http://www.agu.org>).

Most newer scientific reports are factoring in a contribution from ice sheet melting processes, which drives their predictions of future sea level rise higher. Figure 8 shows the projections from the U.S. National Climate Assessment, which are among the latest, authoritative sea level rise projections. The authors included consideration of ice sheet melting, and set the highest projection at 6.6 feet of sea level rise by the year 2100.

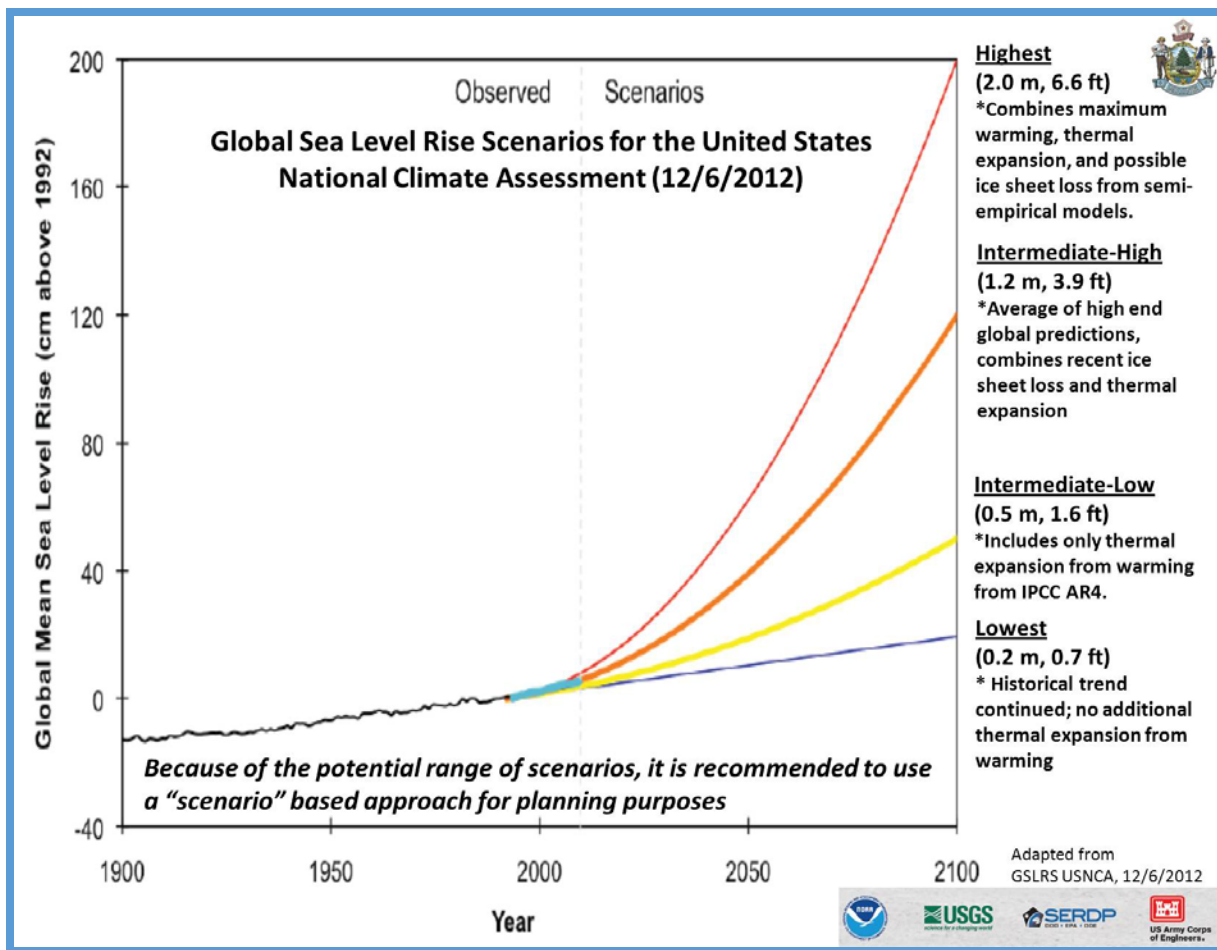


Figure 8: Projections of Sea Level Rise from the U.S. National Climate Assessment

It seems clear from these expert projections that Bowdoinham can expect and should plan for some degree of sea level rise in the coming years. Determining how much sea level rise to plan, and for over what timeframe, are the key unknowns. A scenario based approach is recommended where both high, middle, and low predictions of sea level rise are used. But inaction in the face of uncertainty is not a good option.

Analysis

Vulnerability Assessment – Sea Level Rise Impacts on Roads, Rails, Buildings, Tidal Marshes, and Land Use

The Maine Geological Survey prepared a vulnerability assessment for the Town of Bowdoinham, predicting how many miles of roads and railroads, and the number of buildings that might be flooded by sea level rise alone, in the coming decades. MGS also predicted these impacts to roads, railroads, and buildings, if a 100-year storm occurred, on top of the risen sea level, in the coming decades.

In the civil engineering world, storms of varying strengths are described in terms of their probability of occurrence. A 100-year storm is defined as a storm that has a one in a hundred, or 1% chance of occurring, in any given year. It does not necessarily mean that such a storm will occur only once every 100 years. (With bad luck, such storms can arrive closer together in time.) In the flood insurance studies published for towns, cities, and counties by the Federal Emergency Management Agency (FEMA), the overall water height is predicted for the 100-year storm, which is called the “Base Flood Elevation,” or BFE. In this chapter, we will call the storm with a one in a hundred chance of occurring each year, the “1% storm.”

The analysis started by determining the height of the highest tide of the year that occurs today, and using that as the starting point for the assessment. Table 1 shows, in the first row, that the highest tide of the year occurring today in Bowdoinham is 7.5 feet above Mean Lower Low Water (MLLW). The 1% storm water elevation from the Town’s effective FEMA flood study is 13.2 feet MLLW. With 3.3 feet of sea level rise (1 m), the highest annual tide would reach 10.8 feet, and the 1% storm would reach 16.5 feet. Table 1 summarizes the various water heights that would occur with different amounts of sea level rise during the highest annual tide of the year (the Spring Tide) and with a 1% storm. It should be noted that we used the current flood study height for the 1% storm, when looking into the future. It is probable that every 15 to 20 years, FEMA will update its flood study for Bowdoinham, into the future.

Sea Level Rise Scenario	Planning Timeframe	Highest Annual Tide*	1% storm **
Existing (2013)	Current	7.5	13.2
1 foot (0.3 m)	2050	8.5	14.2
2 feet (0.6 m)	2100	9.5	15.2
3.3 feet (1.0 m)	2100	10.8	16.5
6 feet (1.8 m)	2100+	13.5	19.2

All elevations referenced to feet, above Mean Lower Low Water (MLLW).
** HAT data derived from the nearest NOS tidal prediction stations (Cathance River, 7.5 ft MLLW and Sturgeon Island 6.9 ft MLLW); only Cathance River data shown.*
*** 1% storm data is taken from the community's effective FEMA Flood Insurance Study, dated 11/19/1997; this is 9.4 ft NGVD, or 8.7 ft NAVD.*
The NOAA VDATUM tool was used to convert NAVD to MLLW datum

Table 1: Heights of the Highest Annual Tide, and the 1% Storm, with Different Amounts of Sea Level Rise

Peter Slovinsky, MGS, POSM project, 2013

Then GIS analysis (Geographic Information Systems, or computer mapping) was conducted to estimate the impacts to roads, railroads and buildings, associated with these higher water levels. These are general estimates based solely on the current building stock and current road and rail network, and are suitable for planners to understand the relative changes in impacts at varying states of sea level rise and storm surge.

There are 85.6 miles of roads and 10.3 of rails in the Town of Bowdoinham. Table 2 shows the mileage of roads and rails that would be flooded, as well as the percentage of total road and rail miles flooded, with different levels of sea level rise on top of the Highest Annual Tide:

Scenario (HAT)	Impacted Roads		Impacted Rails	
	Miles	% impacted*	Miles	% impacted*
Existing Conditions	0.0	0.0%	0.0	0%
0.3 m (1 foot) SLR	0.0	0.0%	0.0	0%
0.6 m (2 feet) SLR	0.0	0.0%	0.0	0%
1.0 m (3.3 feet) SLR	0.2	0.2%	0.0	0%
1.8 m (6.0 feet) SLR	1.8	2.1%	0.3	3%

**impacted means the road or rail is covered by water*

Table 2: Road and Rail Infrastructure Affected by Sea Level Rise Alone

Peter Slovinsky, MGS, POSM project, 2013

The next step in the analysis was to model how much flooding might occur, when a 1% storm came on top of sea level rise. Table 3 shows the mileage of roads and rails that would be flooded, as well as the percentage of total road and rail miles flooded, with a 1% storm on top of different levels of sea level rise:

Scenario (1% storm)	Miles of Impacted Roads and Rails			
	Road Miles	% impacted*	Rail Miles	% impacted*
Existing Conditions	1.0	1.2%	0.1	1%
0.3 m (1 foot) SLR	1.8	2.1%	0.3	3%
0.6 m (2 feet) SLR	2.2	2.6%	0.7	7%
1.0 m (3.3 feet) SLR	3.4	4.0%	1.5	15%
1.8 m (6.0 feet) SLR	5.1	6.0%	2.9	28%

**impacted means the road or rail is covered by water*

Table 3: Road and Rail Infrastructure Affected by a 1% Storm on Top of Sea Level Rise *Peter Slovinsky, MGS, POSM project, 2013*

The following figures below, illustrate the locations of predicted future road and rail inundations, as summarized in Tables 2 and 3. These are screen shots from a Google Earth project file which was created by MGS for this comprehensive plan chapter, in order to calculate the results in Tables 1 through 4. The Google Earth files are on file at the Bowdoinham Town Office. Each of the figures represents predicted flooding for a scenario of either sea level rise alone, or a 1% storm heightened by sea level rise, by a future date.

It should be noted that no figures were provided below for the year 2025, as only 6 inches of sea level rise is expected by that date, and no impacts were predicted that would be visible at this scale.

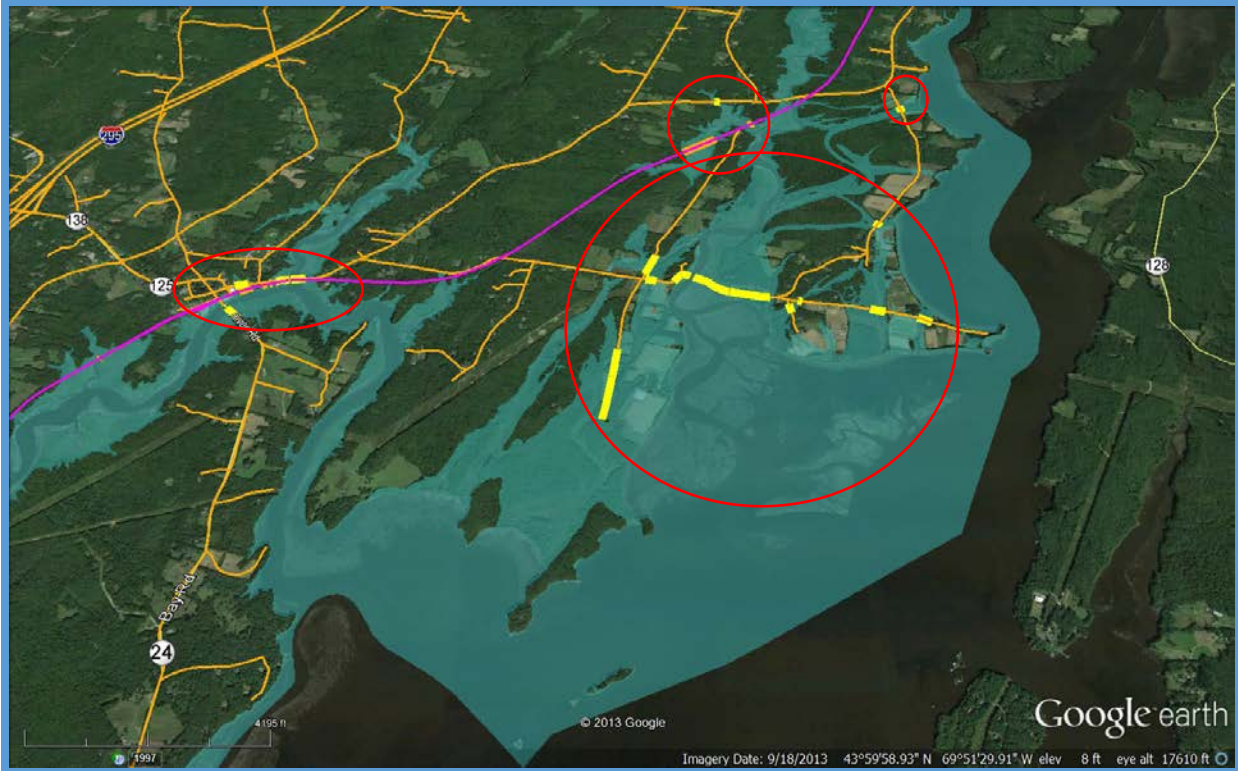


Figure 9: 2050 Predicted Road and Rail Inundation with 1 foot of Sea Level Rise and Storm Surge from a 1% Storm, illustrating Table 3, row 2. Total Water Elevation = 14.2 feet above MLLW. Peter Slovinsky, MGS, POSM project, 2013

Legend

- Purple Line – Railroad
- Orange Lines – Road Network, from E-911
- Yellow Segments – Inundated Roads
- Orange Segments – Inundated Rails
- Red Circles – Areas around inundation
- Blue Shade – Extent of Flooding

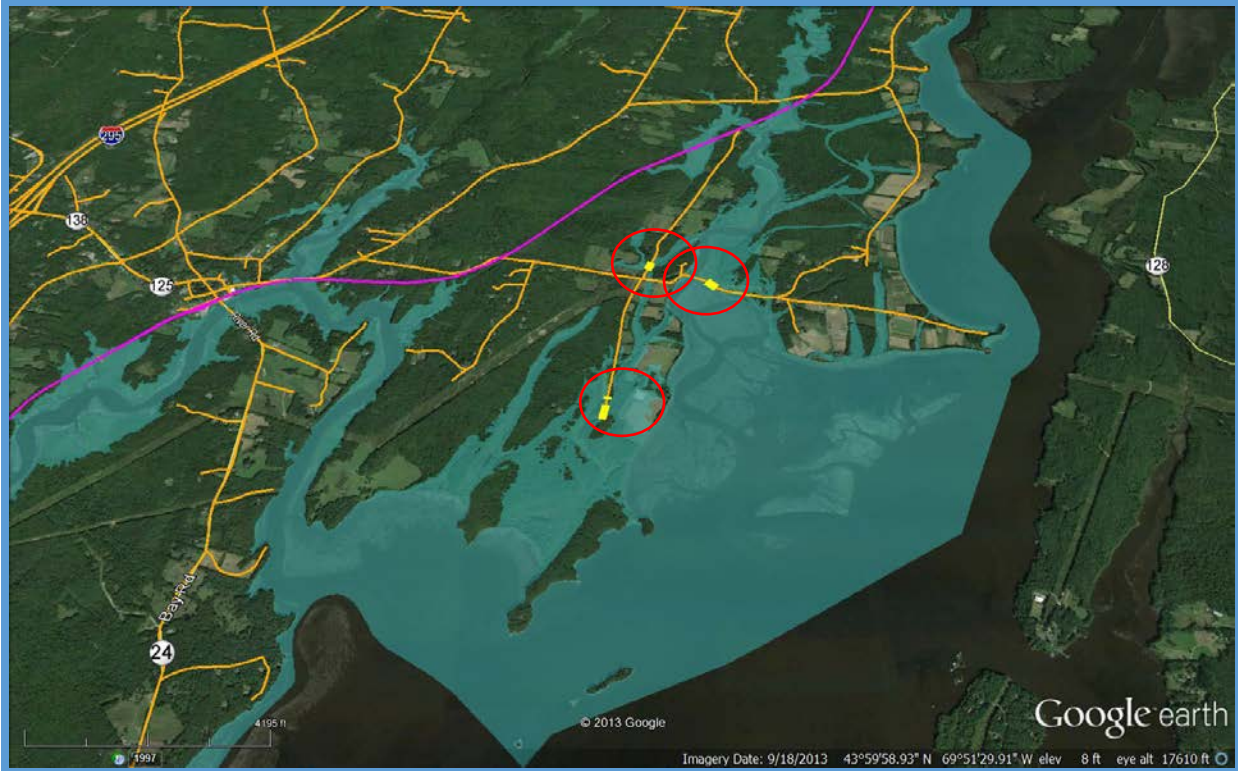


Figure 10: 2100 Predicted Road and Rail Inundation with 3.3 feet (1 m) of Sea Level Rise Alone, illustrating Table 2, row 4. Total water level = 10.8 feet above MLLW.

Peter Slovinsky, MGS, POSM project, 2013

Legend

- Purple Line – Railroad
- Orange Lines – Road Network, from E-911
- Yellow Segments – Inundated Roads
- Orange Segments – Inundated Rails
- Red Circles – Areas around inundation
- Blue Shade – Extent of Flooding

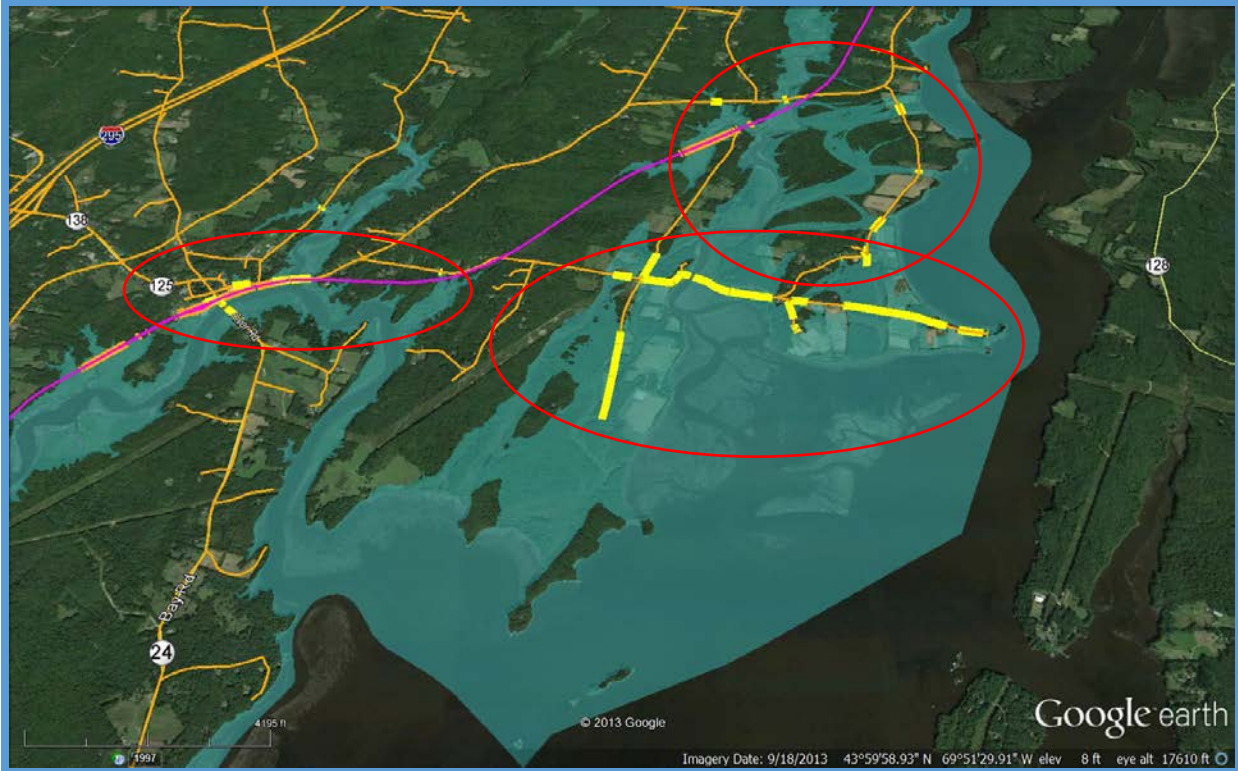


Figure 11: 2100 Predicted Road and Rail Inundation with 3.3 feet (1 m) of Sea Level Rise and Storm Surge from a 1% Storm, illustrating Table 3, row 4. Total water level = 16.5 feet above MLLW.

Peter Slovinsky, MGS, POSM project, 2013

Legend

- Purple Line – Railroad
- Orange Lines – Road Network, from E-911
- Yellow Segments – Inundated Roads
- Orange Segments – Inundated Rails
- Red Circles – Areas around inundation
- Blue Shade – Extent of Flooding

The next step of the MGS analysis was an estimate of the number of buildings affected by sea level rise and future storm surges. Table 4 indicates the number of buildings whose center points would be flooded by the highest annual tide (HAT) with varying amounts of sea level rise, as well as how many would be flooded if a 1% storm in the future, came on top of sea level rise:

Scenario of Sea Level Rise on Top of the Highest Annual Tide (HAT)	<u>Number of Buildings Impacted*</u>	
	By HAT only	By the 1% storm
Existing Conditions	0	7
0.3 m (1 foot) SLR	0	12
0.6 m (2 feet) SLR	0	14
1.0 m (3.3 feet) SLR	4	23
1.8 m (6.0 feet) SLR	12	46

**impacted means the building point is intersected by water*

Table 4: Number of Buildings Affected by Sea Level Rise Alone; by Sea Level Rise on Top of a 1% Storm

Peter Slovinsky, MGS, POSM project, 2013

Figures 12 through 14 below, illustrate the building impacts from Table 4.

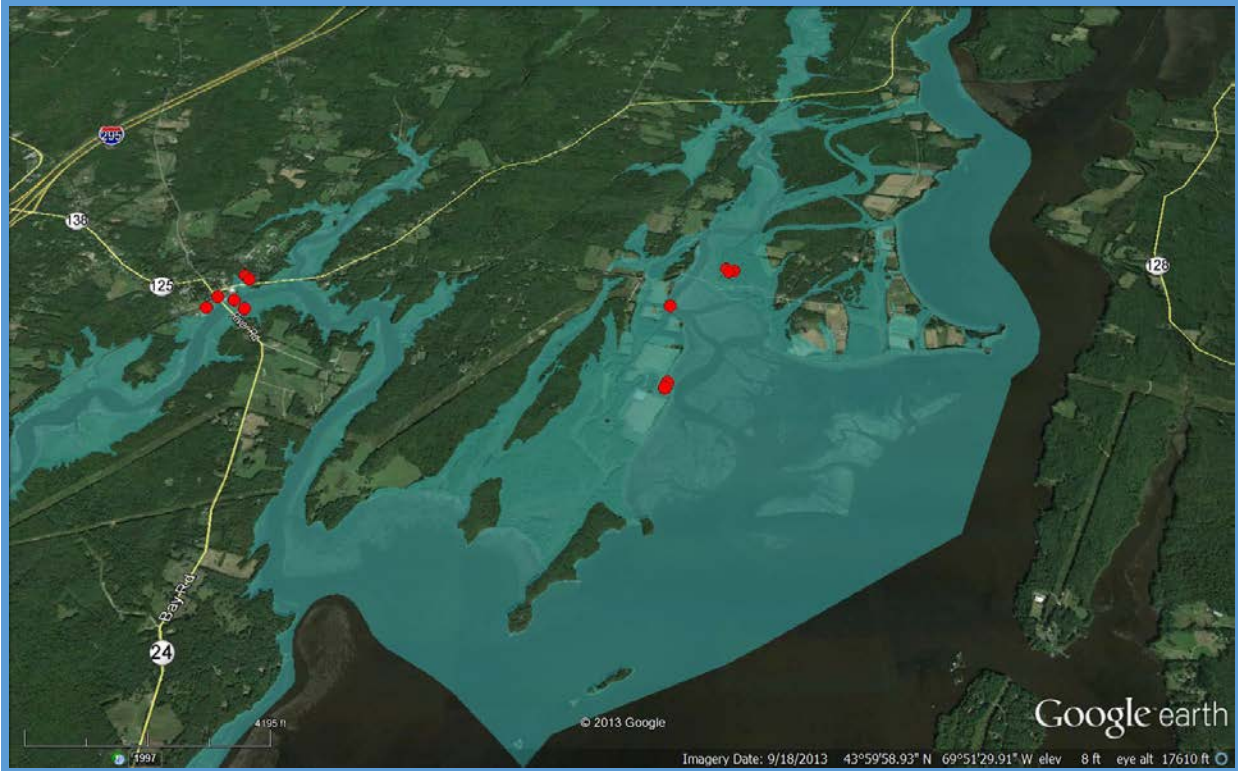


Figure 12: 2050 Predicted Building Inundation with 1 foot of Sea Level Rise and Storm Surge from a 1% Storm, illustrating Table 4, row 2. Total Water Elevation = 14.2 feet above MLLW.
Peter Slovinsky, MGS, POSM project, 2013

Legend

- Red Dots – Center Points of Buildings Inundated
- Blue Shade – Extent of Flooding

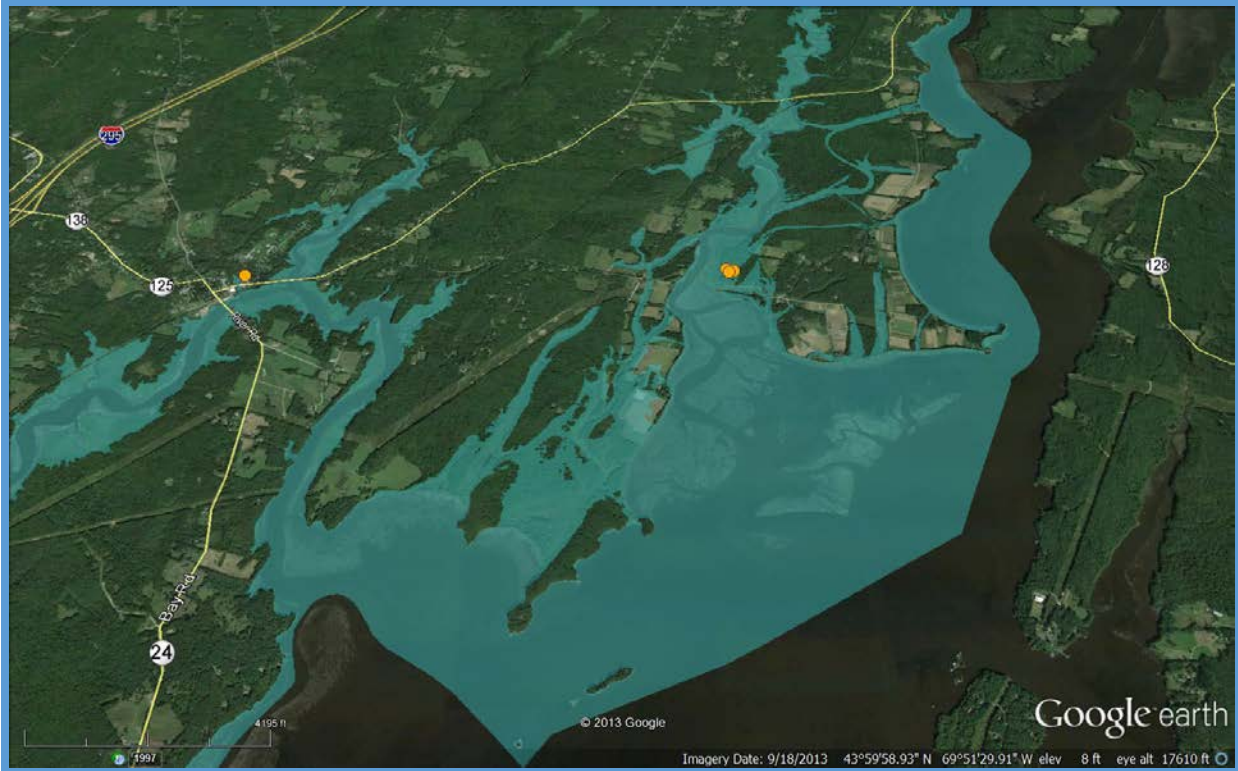


Figure 13: 2100 Predicted Building Inundation with 2 to 3.3 feet (0.6 - 1 m) of Sea Level Rise Alone, illustrating Table 4, rows 3 & 4, column 1. Total Water Elevation = 10.8 feet above MLLW. Peter Slovinsky, MGS, POSM project, 2013

Legend

- Orange Dots – Center Points of Buildings Inundated
- Blue Shade – Extent of Flooding

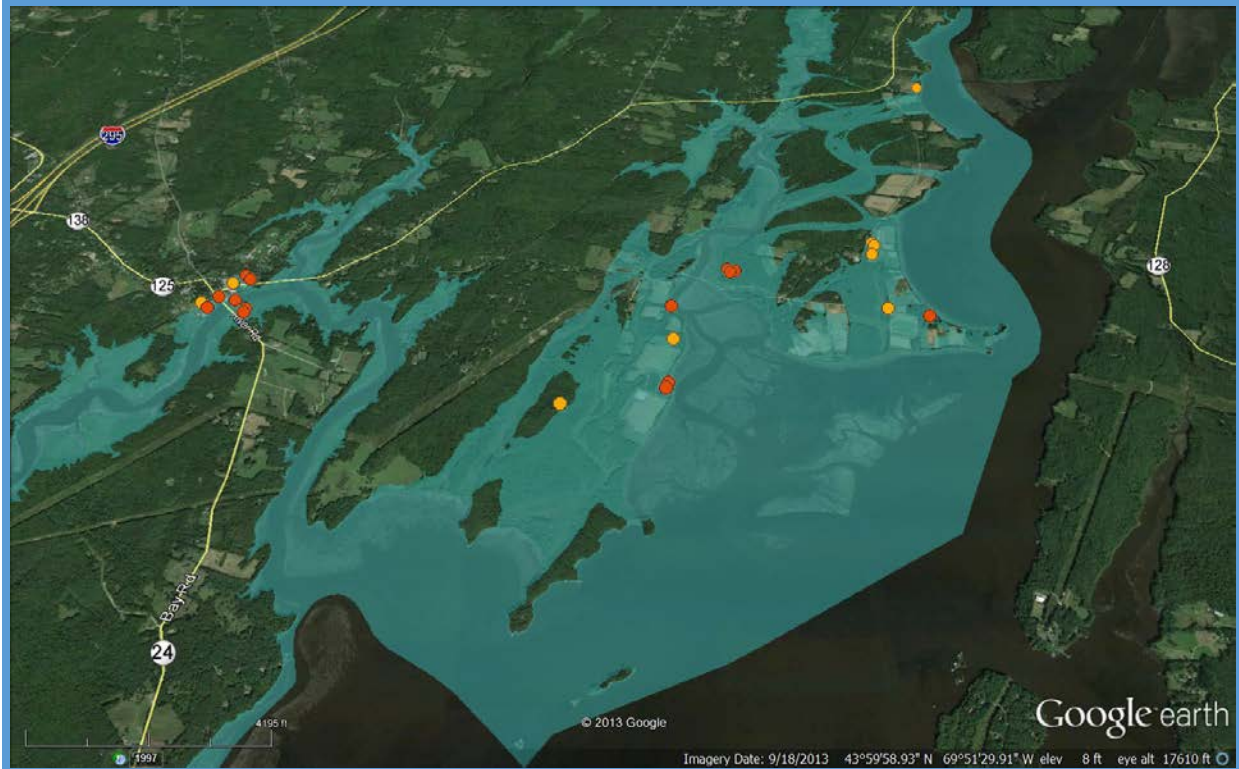


Figure 14: 2100 Predicted Building Inundation with 2 to 3.3 feet (0.6 – 1 m) of Sea Level Rise and Storm Surge from a 1% Storm, illustrating Table 4, rows 3 & 4, column 2. Total Water Elevation = 16.5 feet above MLLW.

Peter Slovinsky, MGS, POSM project, 2013

Legend

- Orange Dots - Center Points of Buildings Inundated by 3.3 feet of Sea Level Rise (SLR) with a 1% Storm
- Red Dots - Center Points of Buildings Inundated by 2 feet of SLR with a 1% Storm
- Blue Shade – Extent of Flooding

In the next step of the assessment, MGS predicted the effect of sea level rise on tidally influenced marshes in Bowdoinham. Marshes serve many important functions, including nurseries for fish and other aquatic species, as habitat for birds, and as reservoirs that slow down and store stormwaters during storm events. Furthermore, it has been shown that healthy saltmarshes can provide other ecological benefits, such as filtering pollutants and sediments that run off from adjacent uplands.

Table 5 shows the acreage of lands adjacent to today’s tidal marshes that may be expected to convert to marsh, as sea level rises. If the marshes of today are allowed to flood higher as sea level increases, and are not obstructed by walls, roads, or fill, they will naturally attempt to migrate landward, and continue to provide ecological services as habitat for aquatic life and birds, and as reservoirs for flood control, and as filters for sediments and pollutants. See Table 5.

Scenario	Estimated Potential Expansion Area Of Tidal Marshes (acres)	Cumulative Potential Expansion Area
Existing Conditions	N/A	N/A
0.3 m (1 foot) SLR	292	292
0.6 m (2 feet) SLR	187	479
1.0 m (3.3 feet) SLR	276	755
1.8 m (6.0 feet) SLR	520	1275

** based on tidal elevations for each SLR scenario*

Table 5: Estimates of Acres of Land, Adjacent to Today’s Tidal Marshes, that May Convert to Tidally-Influenced Marsh, with Various Levels of Sea Level Rise
Peter Slovinsky, MGS, POSM project, 2013

Figures 15 and 16 below illustrate the results in Table 5.

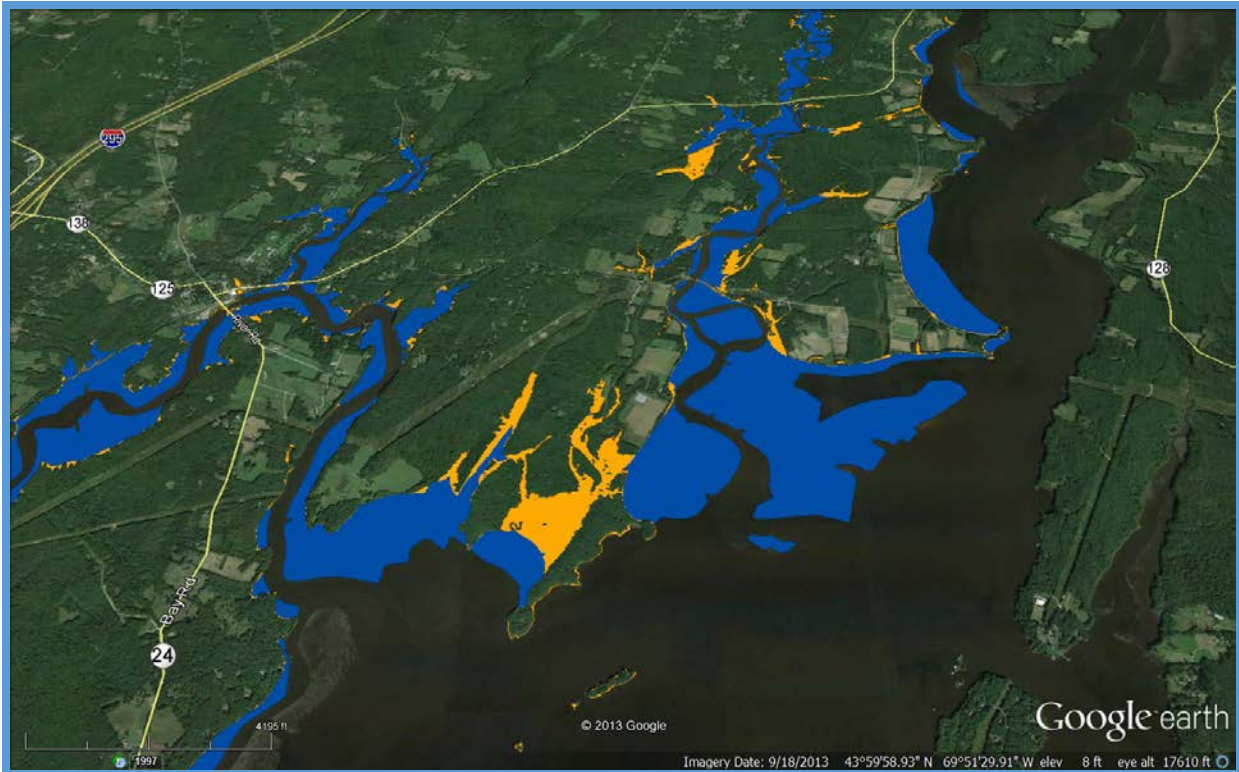


Figure 15: 2050 Predicted Tidal Marsh Expansion with 1 foot of Sea Level Rise, illustrating Table 5, row 2. Total Water Level = 8.5 feet above MLLW.
Peter Slovinsky, MGS, POSM project, 2013

Legend

Dark Blue – Current Extent of Tidal Marshes

Gold – Predicted Expansion Area of Marsh with 1 foot of Sea Level Rise

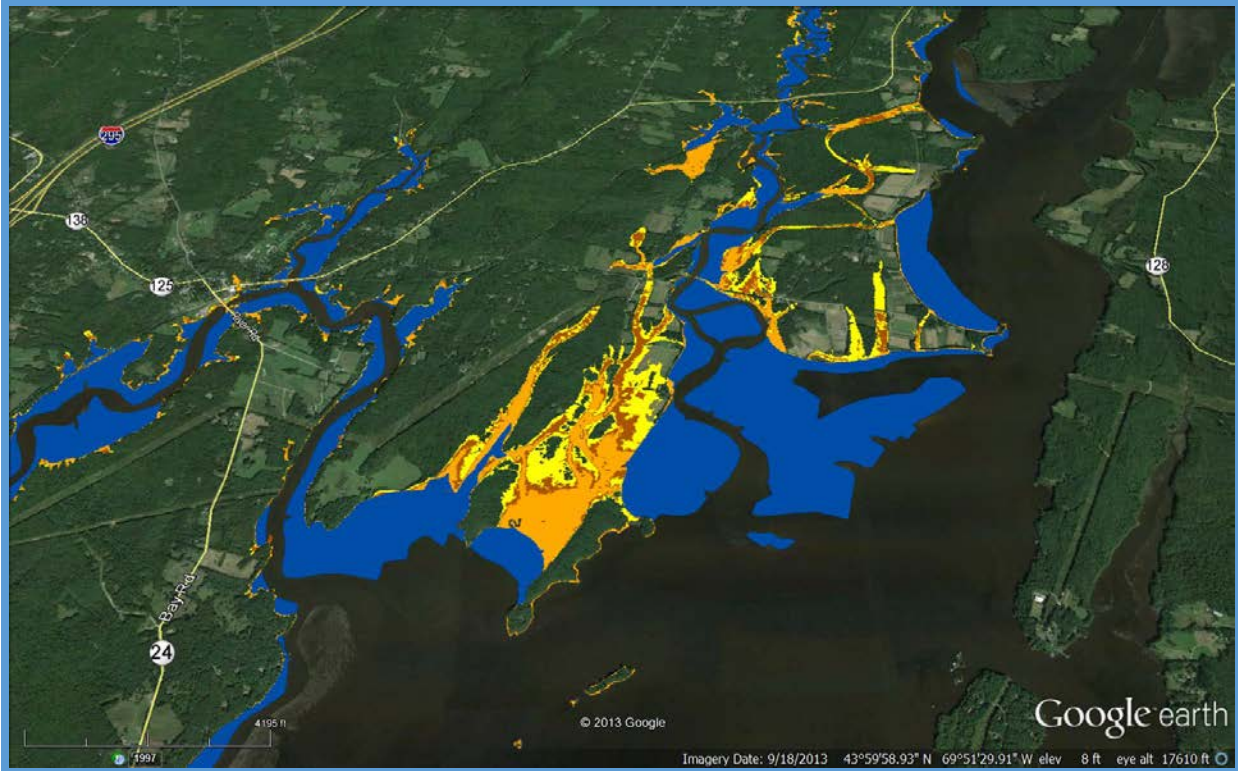


Figure 16: 2100 Predicted Tidal Marsh Expansion with up to 3.3 feet (1 m) of Sea Level Rise, illustrating Table 5, rows 3 & 4. Total Water Level = 10.8 feet above MLLW.

Peter Slovinsky, MGS, POSM project, 2013

Legend

Dark Blue – Current Extent of Tidal Marshes

Gold – Predicted Expansion Area of Marsh with 1 foot of Sea Level Rise

Brown - Predicted Expansion Area of Marsh with 2 feet of Sea Level Rise

Yellow - Predicted Expansion Area of Marsh with 3.3 feet (1 m) of Sea Level Rise

Finally, in the last step of the assessment, MGS measured the change in general land use, with predicted sea level rise. The State classified all land into 3 very basic categories: Natural, Agricultural, and Developed. In Bowdoinham, land in the natural category would usually be woods, brushy areas, and marshes. Land in the Agricultural Category would be farm fields, and Developed Land would include buildings, yards, paved areas, and roads. Table 6 below, summarizes expected losses of these three land cover types, as the highest annual tide increases with sea level rise. Figures 17 and 18 illustrate the results of Table 6.

Sea Level Rise Scenario	Planning Timeframe	Losses of Maine Land Cover Type (acres)*			
		Natural	Agricultural	Developed	Total
1 foot (0.3 m)	2050	278.1	6.3	1.7	286.1
2 feet (0.6 m)	2100	166.3	15.4	2.6	184.3
3.3 feet (1.0 m)	2100	230.1	38.2	6.0	274.3
6.0 feet (1.8 m)	2100+	413.2	83.4	20.8	517.4

Maine Land Cover Data included 21 different types which were grouped into 3 dominant types for this study
*acreage differs from estimated wetland expansion areas due to some areas not being classified by MELCD

Table 6: Predicted Loss of Land Cover, by Type, with Various Amounts of Sea Level Rise.
Peter Slovinsky, MGS, POSM project, 2013



Figure 17: 2050 Predicted Inundation of Natural, Agricultural, and Developed Lands with 1 foot of Sea Level Rise Alone, illustrating Table 6, row 1. Total Water Level = 8.5 feet above MLLW. Peter Slovinsky, MGS, POSM project, 2013

Legend

Light Green – Inundated Natural Areas



Figure 18: 2100 Predicted Inundation of Natural, Agricultural, and Developed Lands with 3.3 feet (1.0 m) of Sea Level Rise Alone, illustrating Table 6, rows 2 & 3. Total Water Level = 10.8 feet above MLLW.

Peter Slovinsky, MGS, POSM project, 2013

Legend

- Light Green – Inundated Natural Areas
- Dark Green – Inundated Agricultural Lands
- Red – Inundated Developed Areas including Roads

Climate Change and Increased Precipitation

The next figures in this chapter, Figure 19 & 20, show that water level increases from sea level rise are not the only component that will affect potential flooding conditions in the Town of Bowdoinham. It appears in the rainfall records that there is a trend for higher and more intense rain events that has started in the last twenty to thirty years. Both the annual amount of rain, and the number of rain storms with greater than one inch of rain in 24 hours have increased. The higher levels of rainfall are expected to increase damage experienced in future storms, when combined with the negative effects of sea level rise. See Figures 19 & 20:

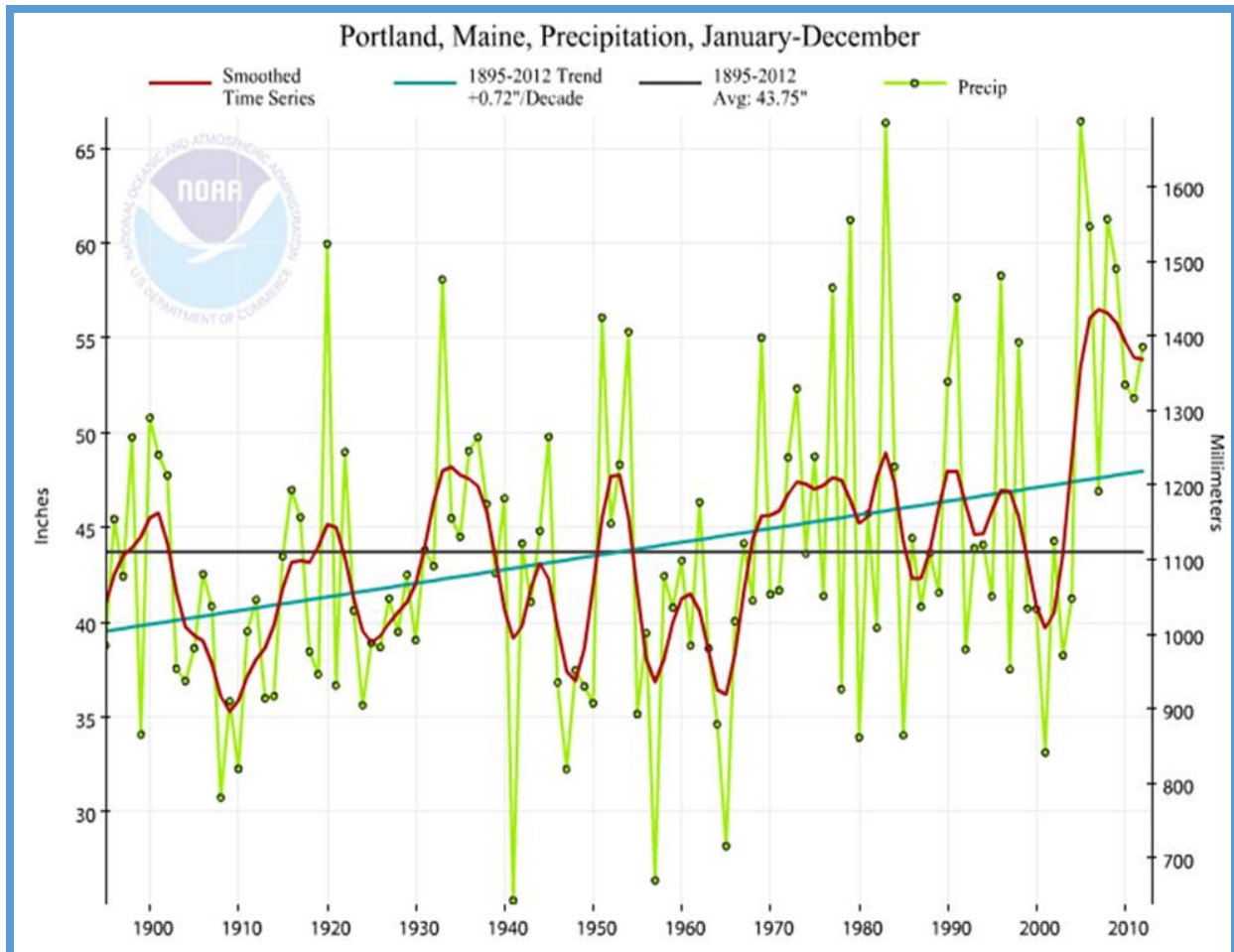


Figure 19: Record of Increasing Annual Precipitation for Portland, Maine

P. Slovinsky, MGS

From NOAA Data through Dec. 31, 2012.

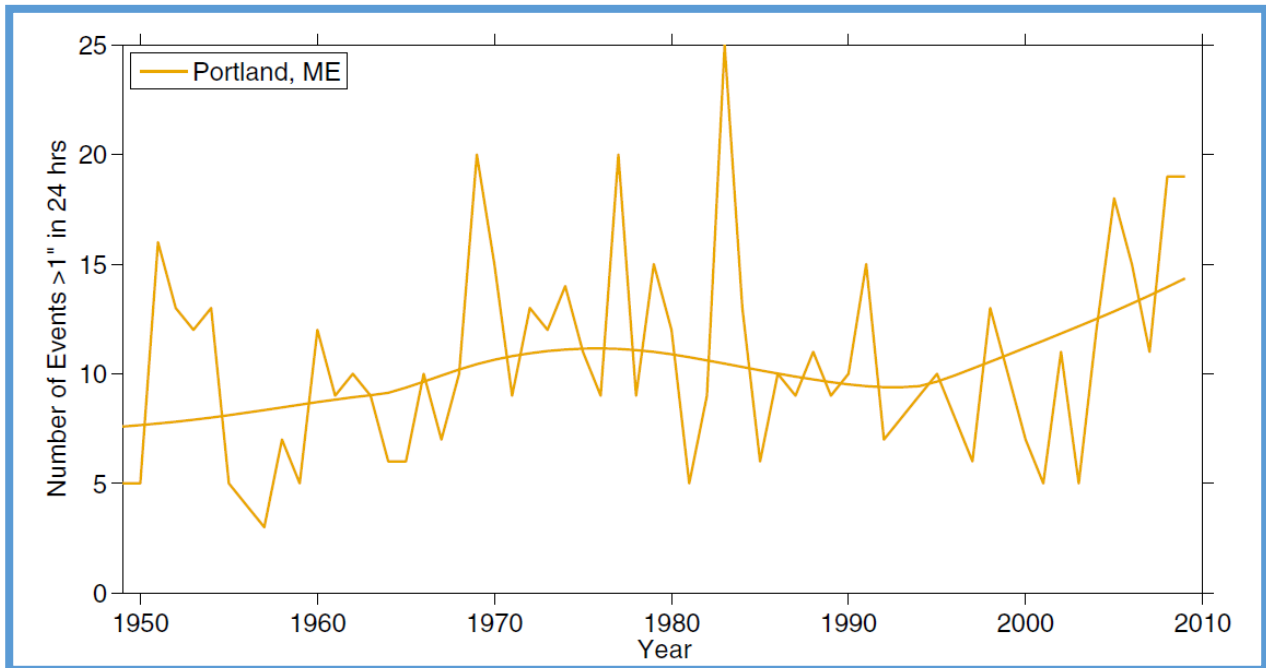


Figure 20: Increasing Number of Rain Events Per Year, Greater than 1 inch, in a 24-Hour Period, for Portland, Maine

From Climate Change in the Piscataqua/Great Bay Region: Past, Present, and Future Carbon Solutions New England, Cameron Wake, et al., December 2011.

When engineers have designed roads, culverts and bridges in the last 50 years or so, they have used the “Rainfall Frequency Atlas of the United States,” known as Technical Paper #40, published by the US government. A page from the Atlas is shown in Figure 21 below, that shows that in Bowdoinham, the 24-hour rainfall that could be expected from a 1% storm would be 6.3 inches. Because of all the observations that annual rainfall has gone up, as well as the intensity of 24-hour storms, Cornell University’s Northeast Regional Climate Center has recently completed an update of the Technical Paper #40 (TP-40). This new update indicates that the 24-hour rainfall that could be expected from a 1% storm would now be 7.62 inches, which is about a 20% increase. What this means as a practical matter, is that any bridge, culvert, or drain in Bowdoinham, which was designed to handle the amount of rain in the TP-40, is probably sized 20% too small to handle a 1% percent, 24-hour rainfall that might occur at any time. For this reason alone, any infrastructure that conveys or crosses water should be considered for an upgrade, when it is going to be replaced.

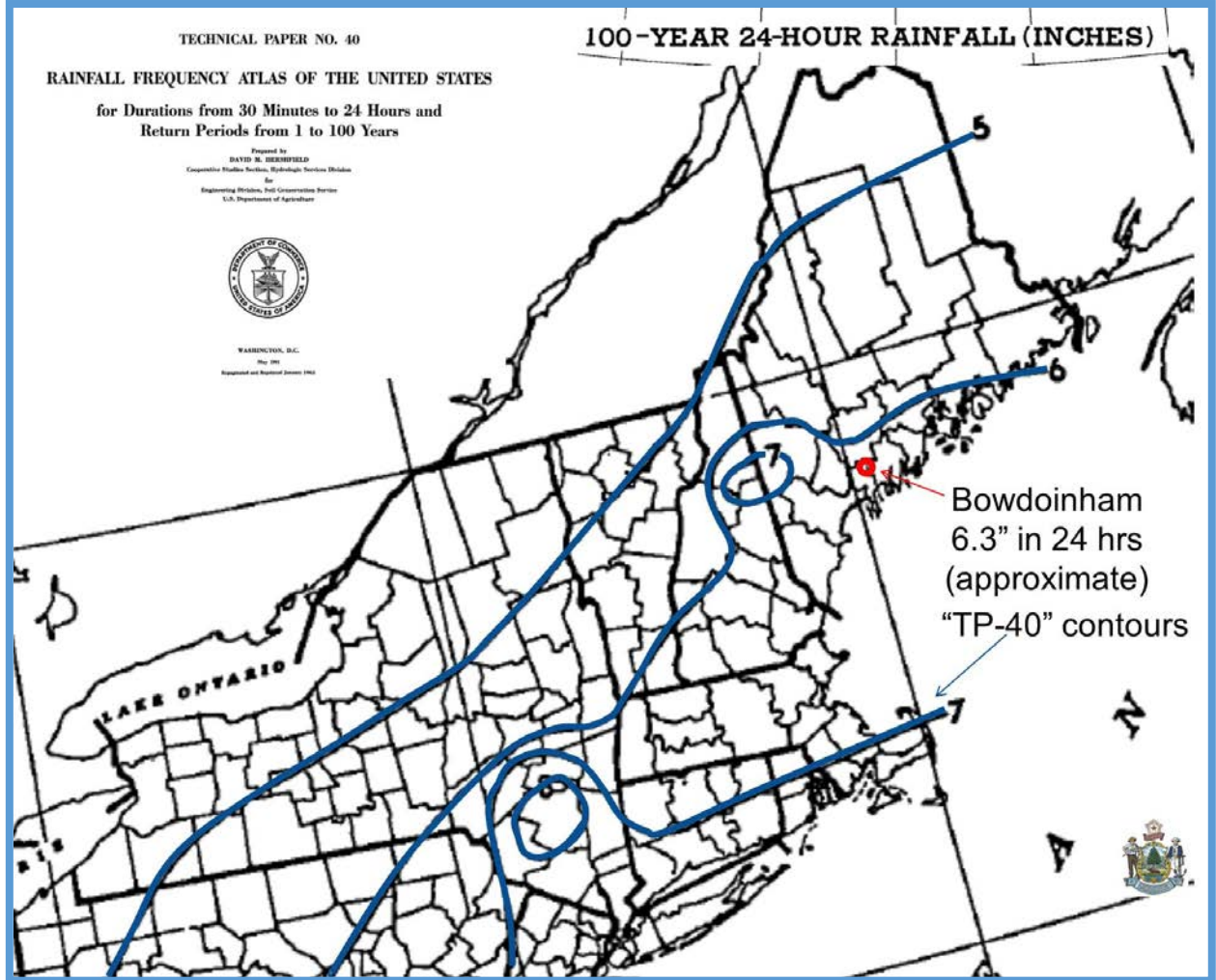


Figure 21: New England Area, from the Rainfall Frequency Atlas of the United States, Technical Paper No. 40.

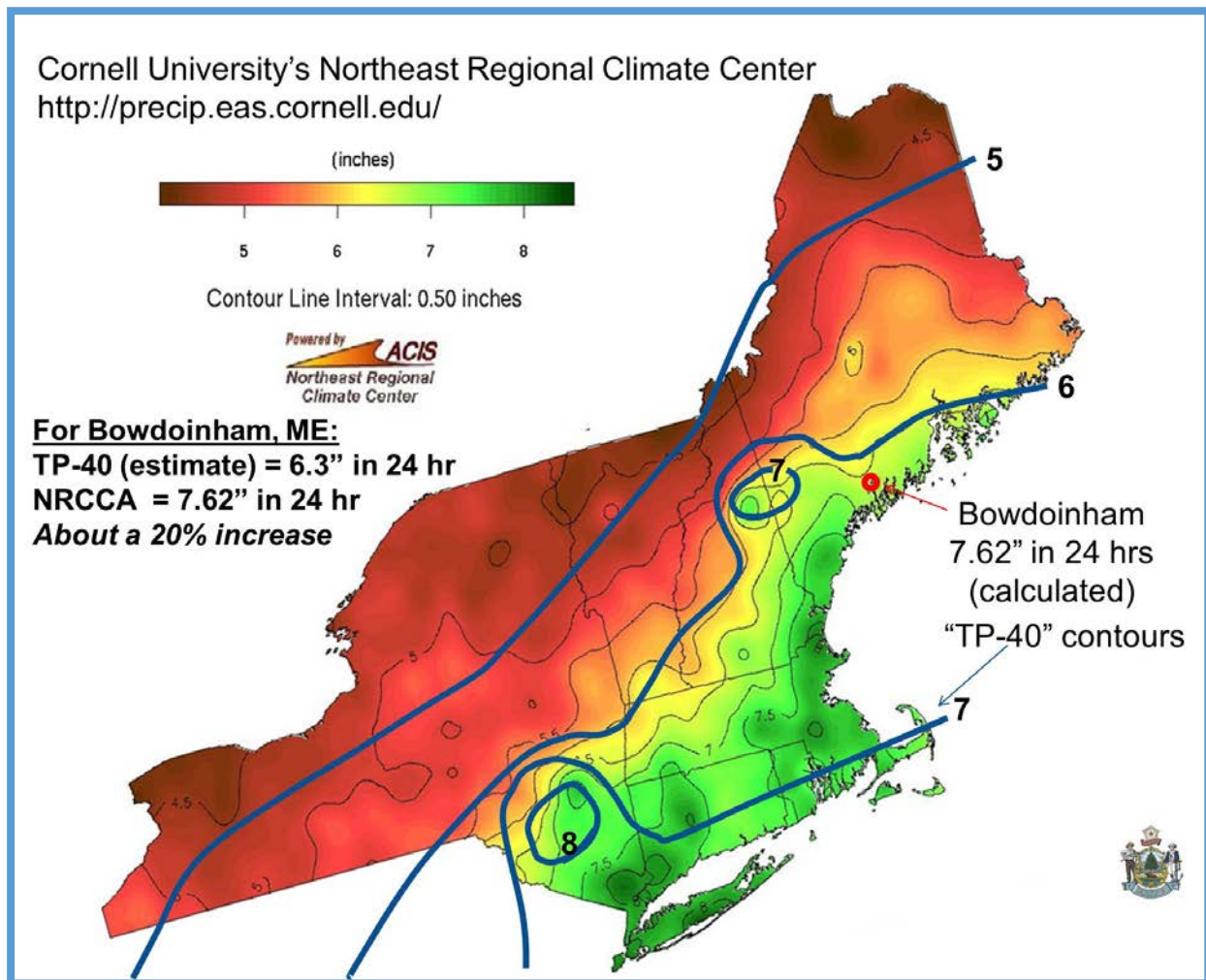


Figure 22: New England Area, from Cornell University's Northeast Regional Climate Center precipitation mapping.

Other Climate Change Impacts Not Included in This Chapter

It should be noted that other possible climate change impacts were not reviewed in the creating of this Comprehensive Plan chapter. These include such varied issues as:

- health impacts from insect-borne diseases such as Lyme Disease;
- high heat days in summer;
- plant and animal species changes, as forest and ocean habitats change; and
- agricultural impacts with higher temperatures.

Only issues of sea level rise and increased water levels on roads, rails, buildings, marshes, and land cover were considered in this chapter.

Additional Information on recommended adaptation Strategies

Strategy #1: Amend the Floodplain Management and Land Use Ordinance to strengthen standards, beyond the minimum FEMA Flood Insurance Program requirements, for new or replacement construction in areas that flood, with potential premium savings to policy holders. Under the rules and regulations of the Federal Flood Insurance Program, in order for its citizens to become eligible to purchase flood insurance, all municipalities must adopt minimum standards for floodplain management, published by FEMA and the State Floodplain Management Office at the Maine Department of Agriculture, Conservation, and Forestry. Municipalities typically adopt the minimum requirements using language provided to the Town Clerk by the State. However, towns and cities can adopt higher standards, and as shown in figure 23 below, this can directly result in annual premium savings to policy-holders. “Freeboard” is the term for the distance between the predicted water level of the 1% storm, and the base floor of a structure. In Maine, one foot of freeboard is the standard requirement. However, if 3 feet of freeboard is provided when a home is constructed or elevated, a homeowner can save 66% on flood insurance premiums over 30 years. In recent years, the Town of Berwick and the City of Saco have adopted a 3 foot freeboard requirement.

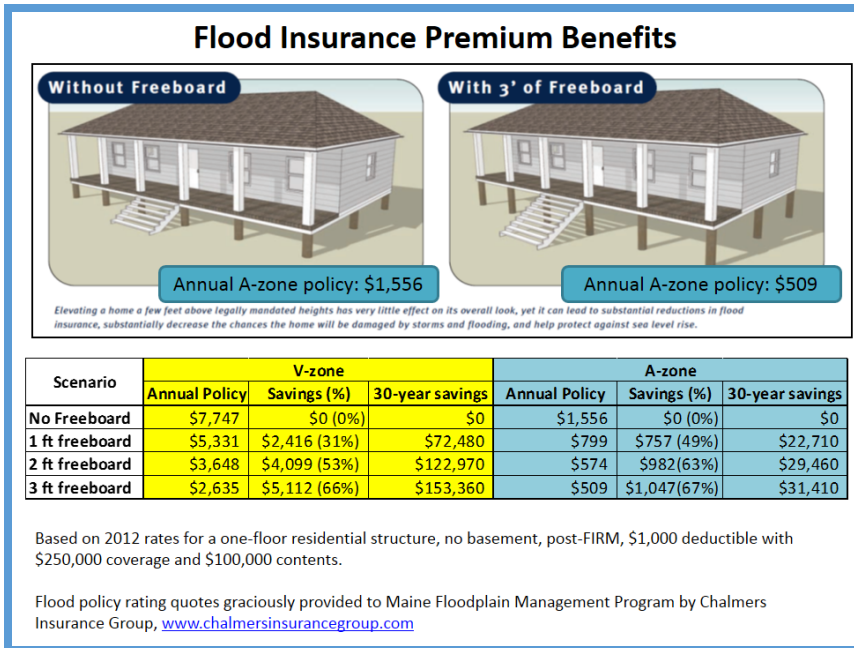


Figure 23: Potential Savings on Flood Insurance Premiums, by Raising the Base Floor of a Home above the Height of the 1% Storm.

Strategy #7: Maintain a digital Shoreland Zoning Map, and locate the position of the highest annual tide level for Bowdoinham, so that the edges of the shoreland zone are accurate on the map, as sea level rise increases.

In Maine, all towns and cities are required to adopt special zoning requirements, called “Shoreland Zoning” within 250 feet of tidal waters and other water bodies. The underpinning of these requirements is the Shoreland Zoning Map, which depicts the required shoreland zones. A variety of standards that affect drainage of stormwater and provide flood protection are keyed to these mapped zones. Unfortunately, the location of the “high water mark,” on most Town Shoreland Zoning Maps dates back to the 1970’s when the program first started, and is no longer accurate. While the text of the Shoreland Zoning Rules requires Towns to consider that the beginning of the zone starts at the contour line equal to the height of the highest tide of the year, most maps do not show this.

Figure 24 is a diagram that shows the old 250 foot Shoreland Zone boundary that was on the zoning maps of Old Orchard Beach for about 30 years, as a purple dotted line. A few years ago, as part of a sea level rise vulnerability assessment, MGS provided Old Orchard Beach with the position of the line marking the highest annual tide for the area, which is 6.3 feet (NAVD 88 units). The town then measured 250 feet back from this new starting point, and set up the Shoreland with the new boundary shown as a red-dotted line. This is now being recommended as a practice that all Towns should consider performing on a regular basis.



Figure 24: East Grand Avenue Area, Old Orchard Beach, Maine. Depiction of Old Shoreland Zone Boundary (purple), and New Shoreland Zone Boundary (red), Now Set 250 feet Horizontally Distant from the Level of the Highest Annual Tide. Highest Annual Tide was set at a contour height of 6.3 feet NAVD 88, using NOAA LiDAR data. From SMRPC.

Strategy #8: Participate in the FEMA National Flood Insurance Community Rating System (CRS) program, so flood insurance policy holders in Bowdoinham can get the best available flood insurance rates.

Bowdoinham has adopted a floodplain management ordinance, and its citizens are eligible to purchase federally-backed flood insurance through FEMA’s flood insurance program. Bowdoinham may choose to enroll in FEMA’s “Community Rating System.” This would entail allowing FEMA to audit Bowdoinham’s Code Enforcement and Building Permit systems, and to rate the Town’s level of commitment to insuring that all aspects of these systems are running as effectively as possible. In exchange for participating, if the Town is rated well after such an audit, all policy holders in the entire community would receive a discount of up to 45%, depending on the grade or “class” that the town is assigned to. Table 7 below shows the possible range of discounts depending on the class assignment. The lower the class, the higher the discount. Approximately 20 communities in Maine participate in the CRS program.

CRS PREMIUM DISCOUNTS			
CLASS	DISCOUNT	CLASS	DISCOUNT
1	45%	6	20%
2	40%	7	15%
3	35%	8	10%
4	30%	9	5%
5	25%	10	—
SFHA (Zones A, AE, A1-A30, V, V1-V30, AO, and AH): Discount varies depending on class.			

Table 7: From FEMA Publication: Community Rating System (CRS) Communities and their Classes - May 2013, page CRS-2, Table 2.

Inventory Maps

Full-size maps are available on the Town's website and at the Town Office. The maps are based on the 2011 data that the State provided to the Town of Bowdoinham, specifically for the purposes of creating a Comprehensive Plan.

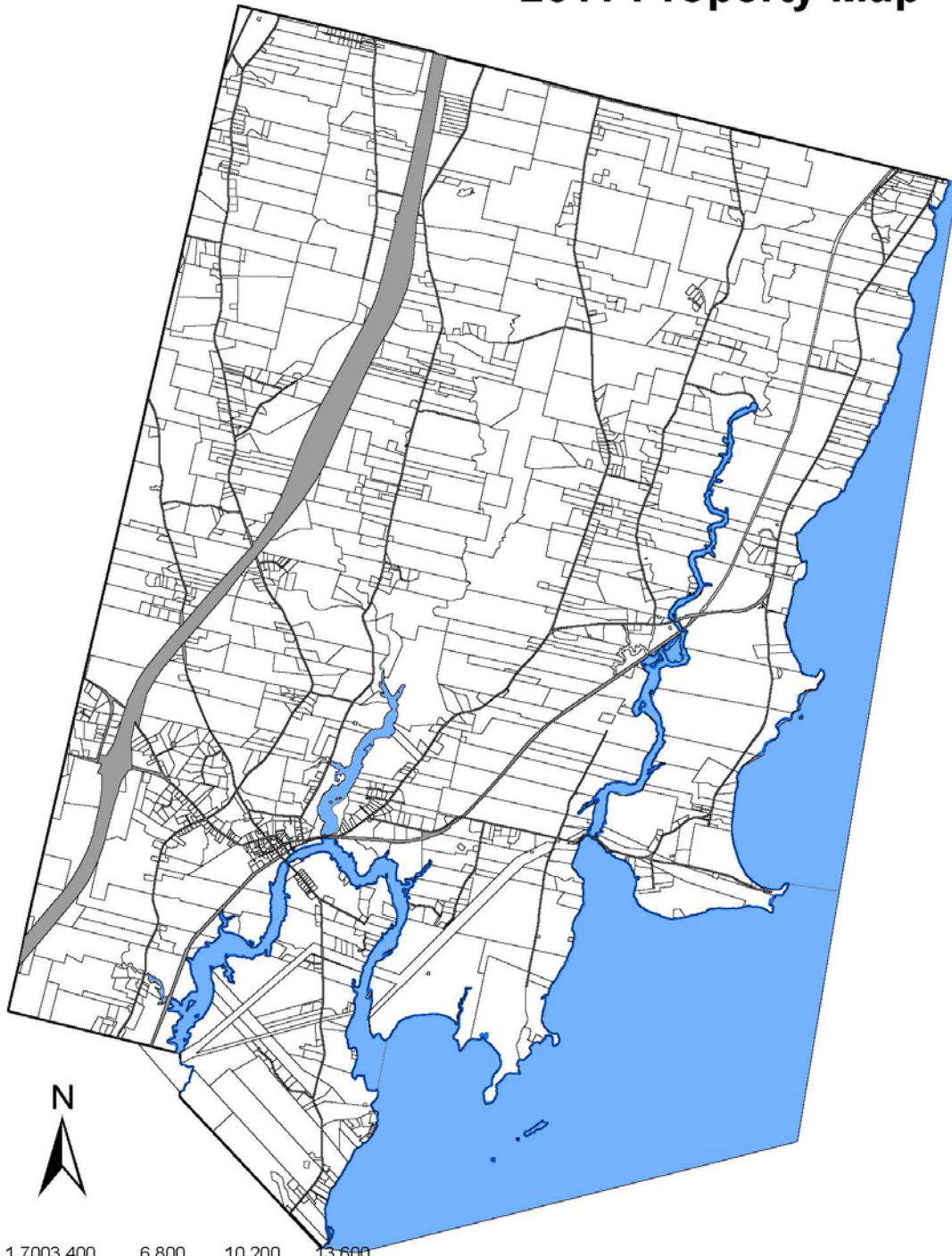


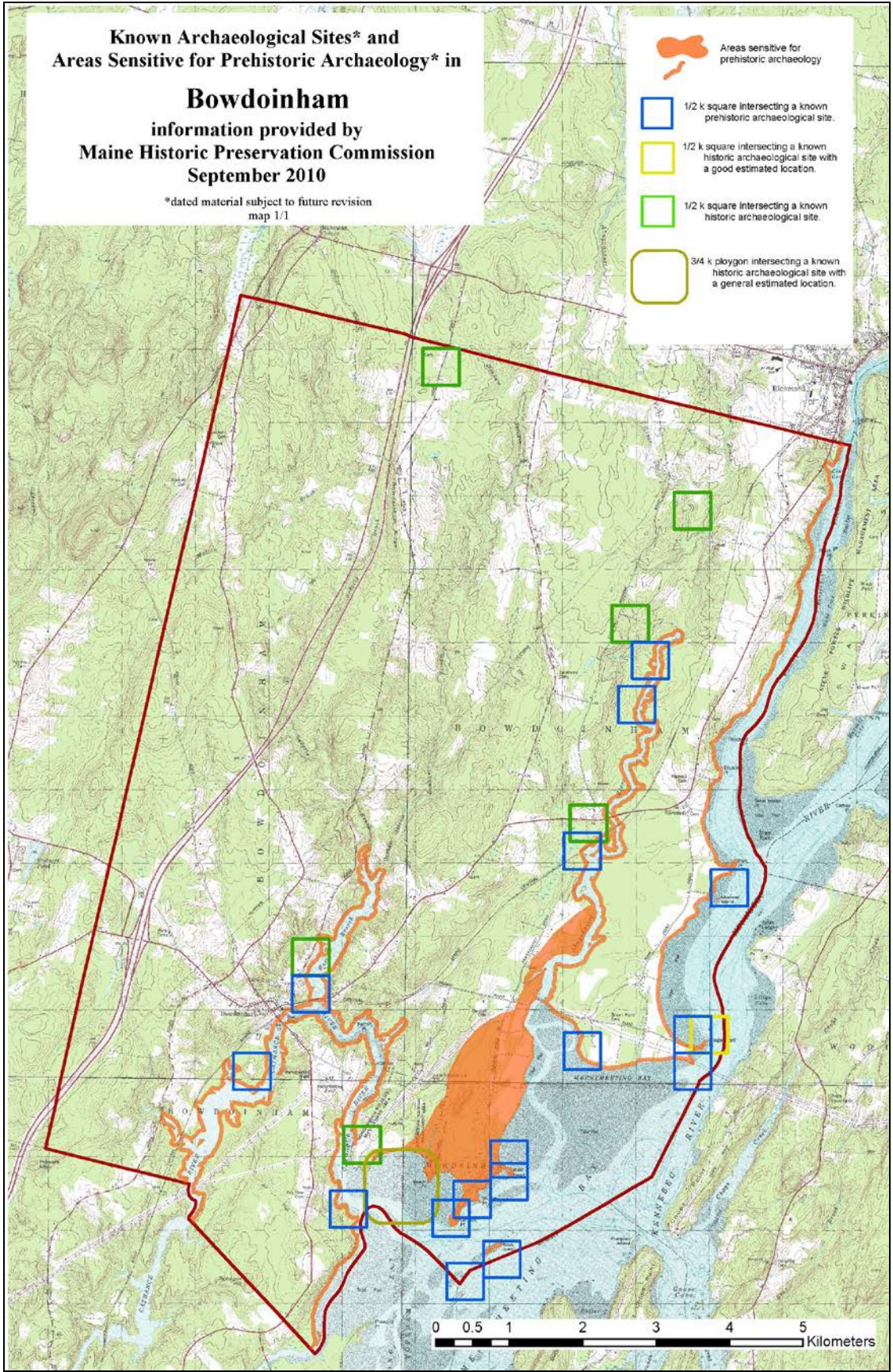
Aerial Photography - 2009
Town of Bowdoinham

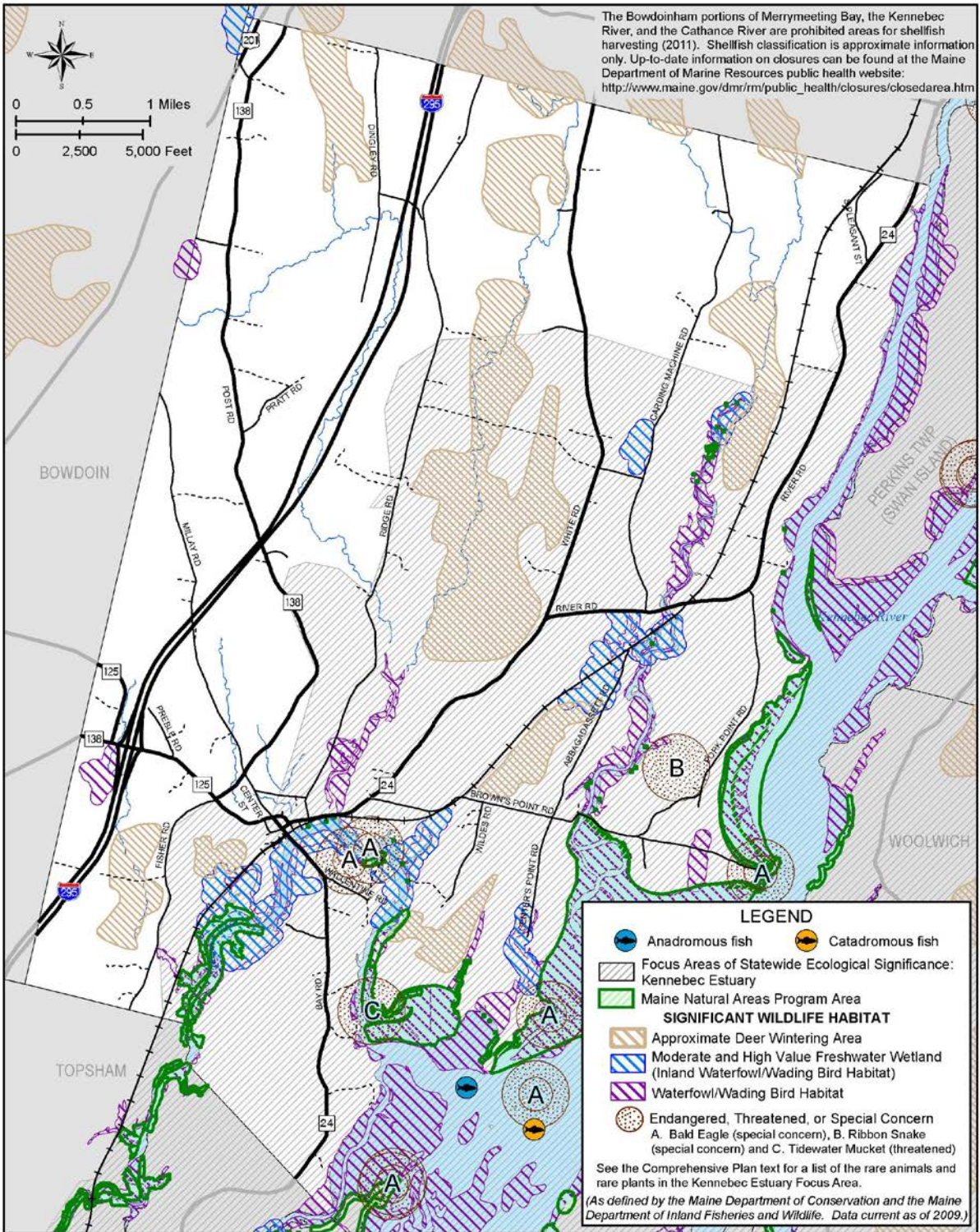
Fall 2011

0 4,000 8,000 12,000 Feet
1:48,000 1 inch = 4,000 feet

2011 Property Map

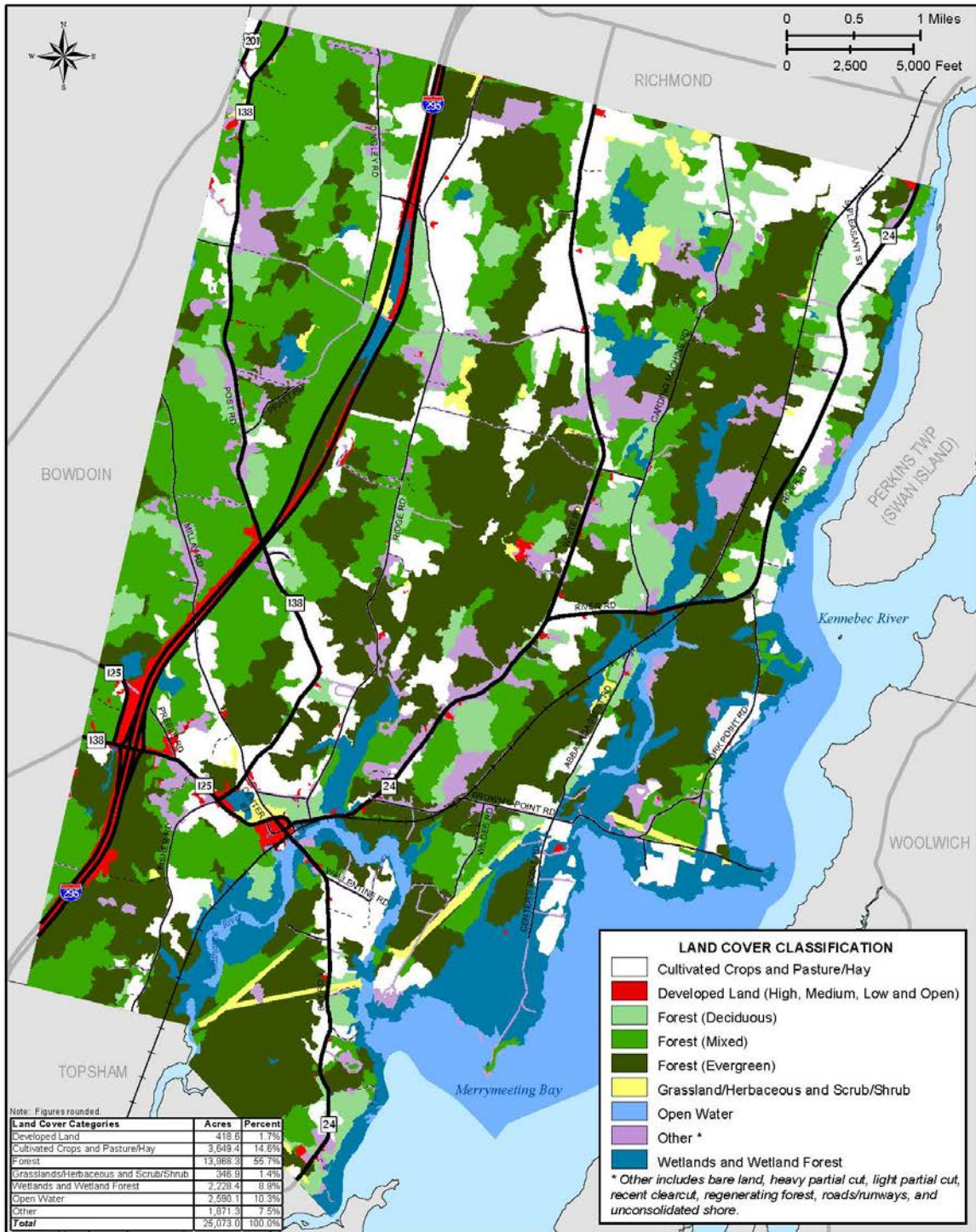






Map created: March 2012
 Map prepared by LatLong Logic, LLC
 Sources: MEIFW, MNAP, MDMR, MEDOT and MEGIS

**BOWDOINHAM COMPREHENSIVE PLAN
 HABITAT AND MARINE RESOURCES**



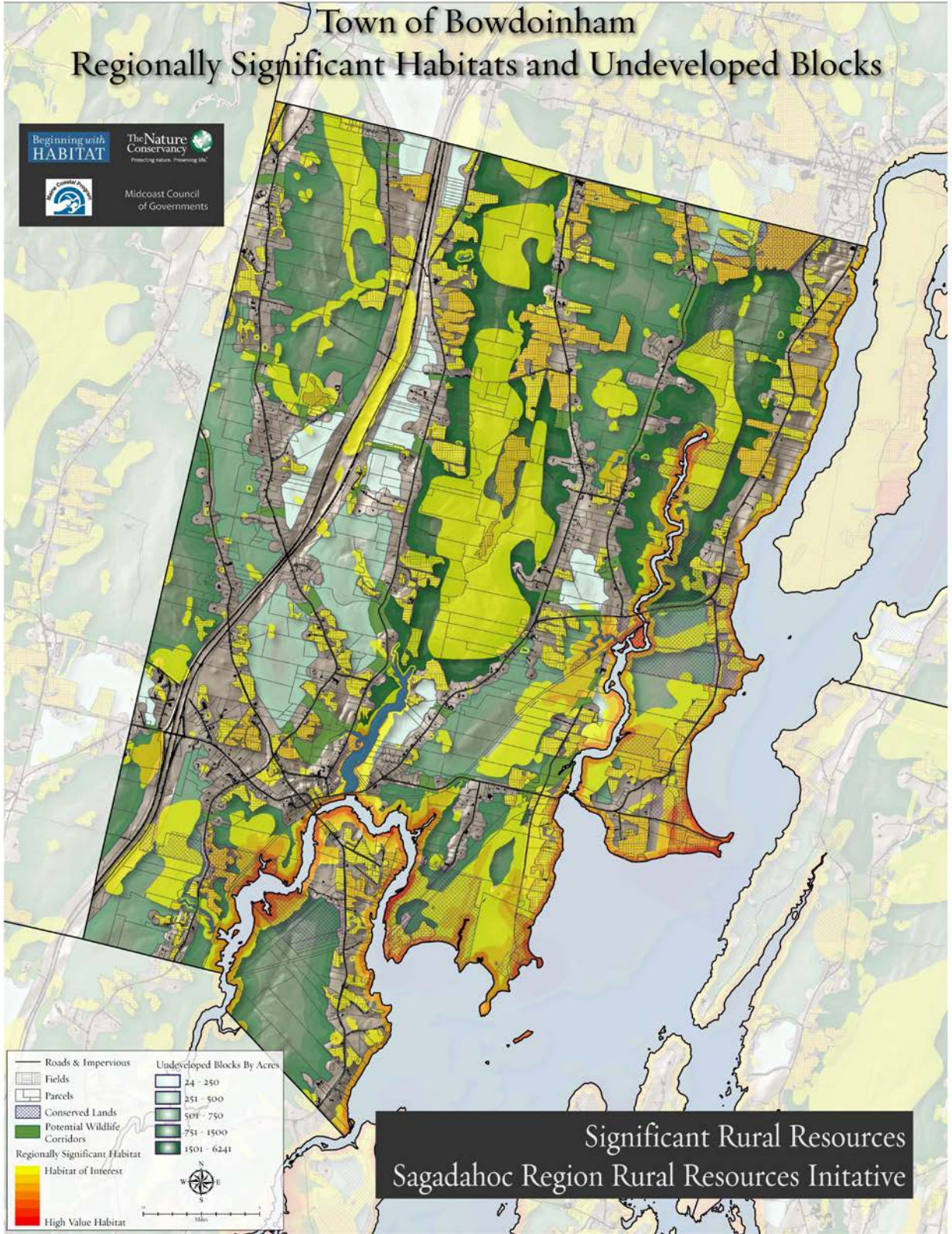
Map created: February 2012
 Map prepared by LatLong Logic, LLC
 Sources: Jointly funded and supported by USGS, NOAA, EPA, MEDEP, MESPO, MEIFW, MEDOT, MEDHHS, MEGIS and the Maine GeoLibrary Board.

The landcover data is based on 2004 SPOT imagery combined with 2001 LandSat data

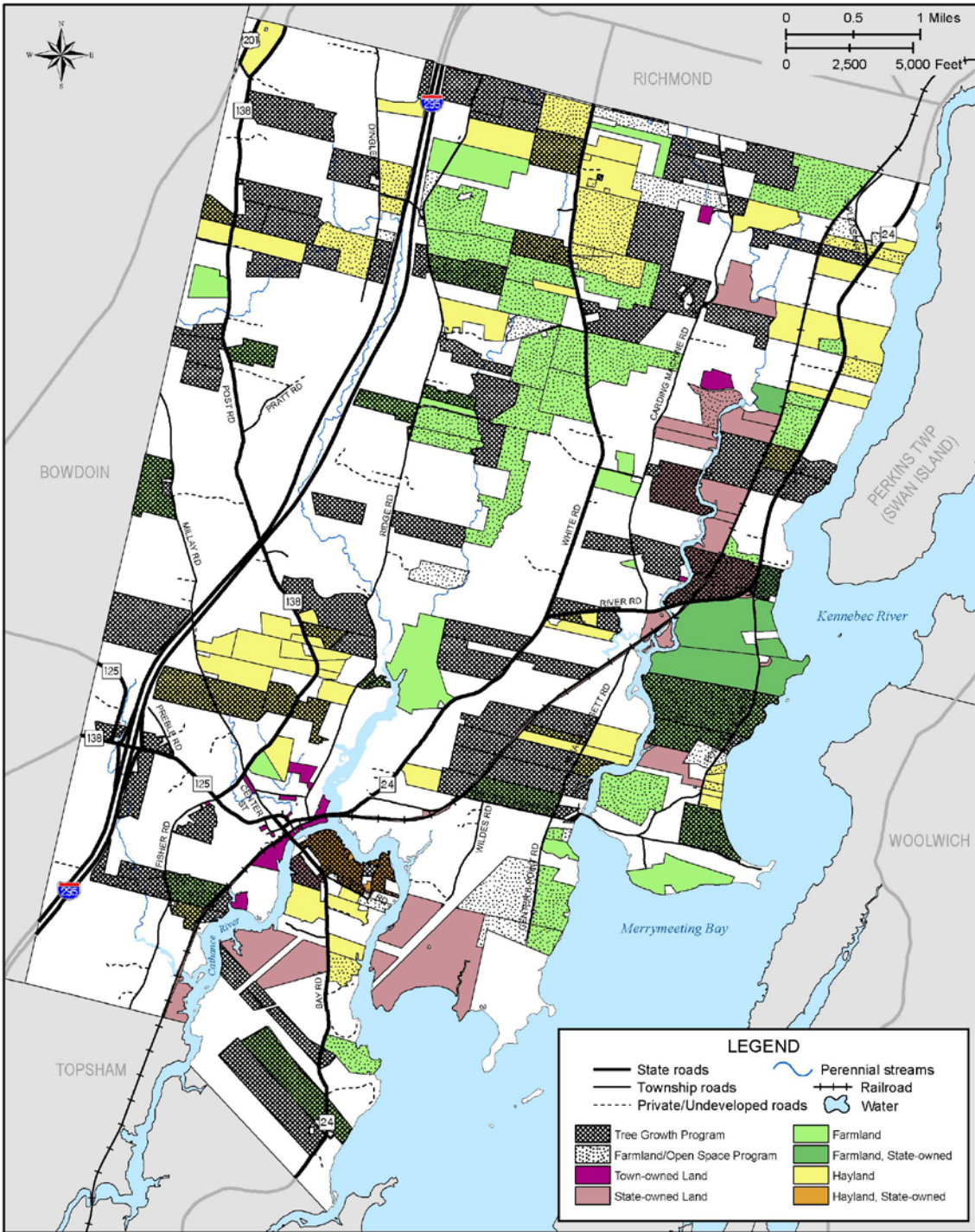
**BOWDOINHAM COMPREHENSIVE PLAN
 LANDCOVER**

Town of Bowdoinham

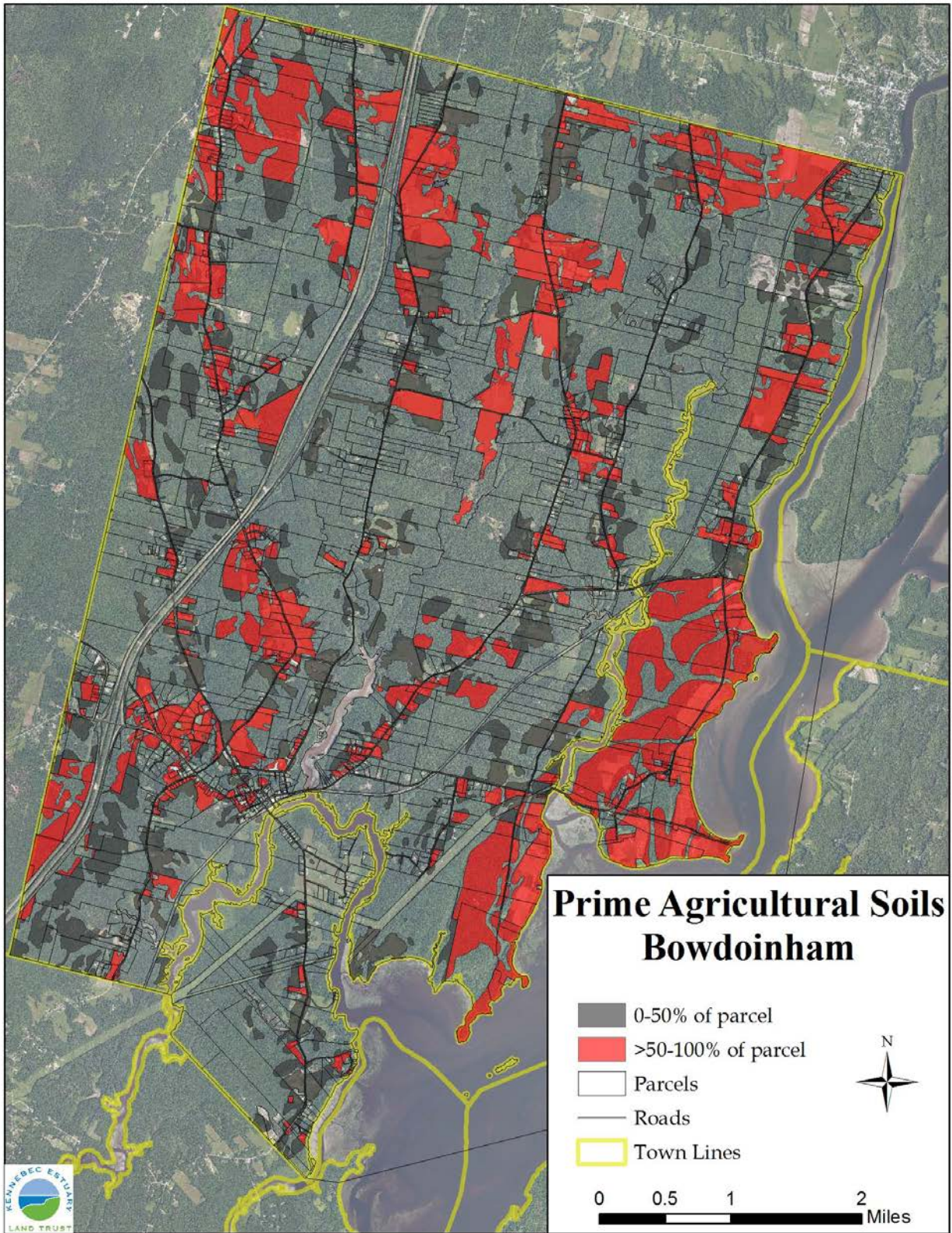
Regionally Significant Habitats and Undeveloped Blocks

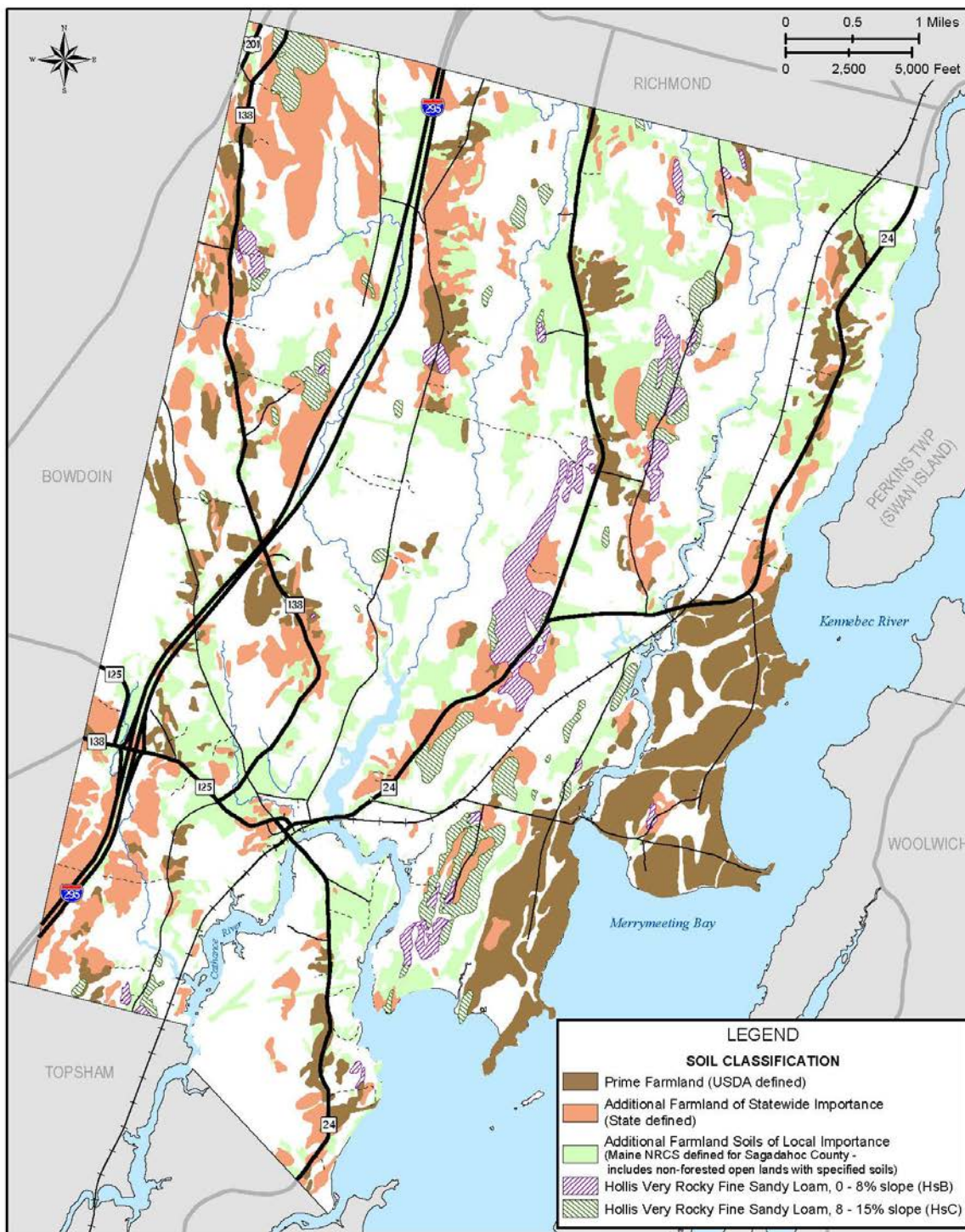


Significant Rural Resources
Sagadahoc Region Rural Resources Initiative



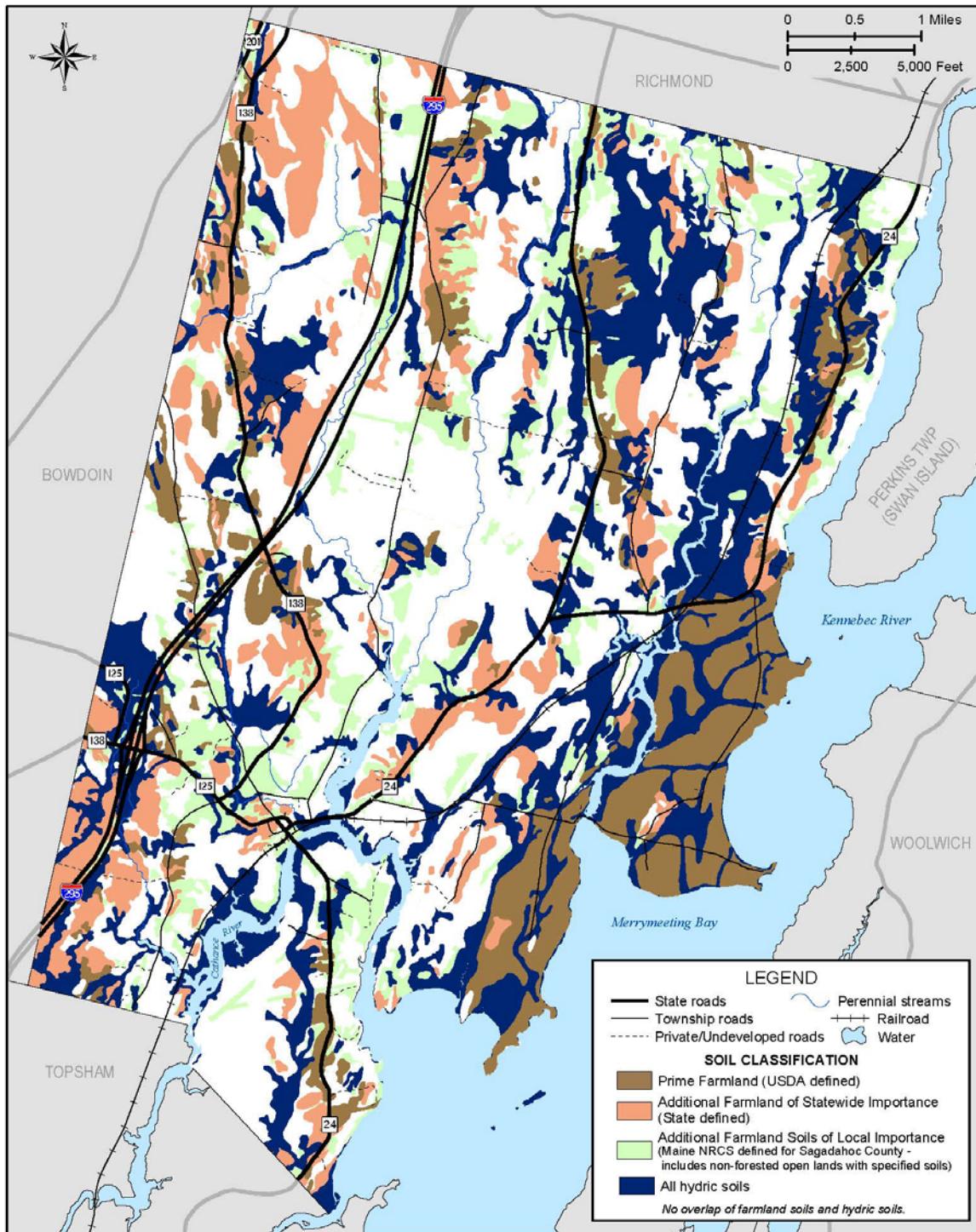
**BOWDOINHAM COMPREHENSIVE PLAN
 FARMLAND/HAYLAND & CURRENT USE TAX PROGRAMS**





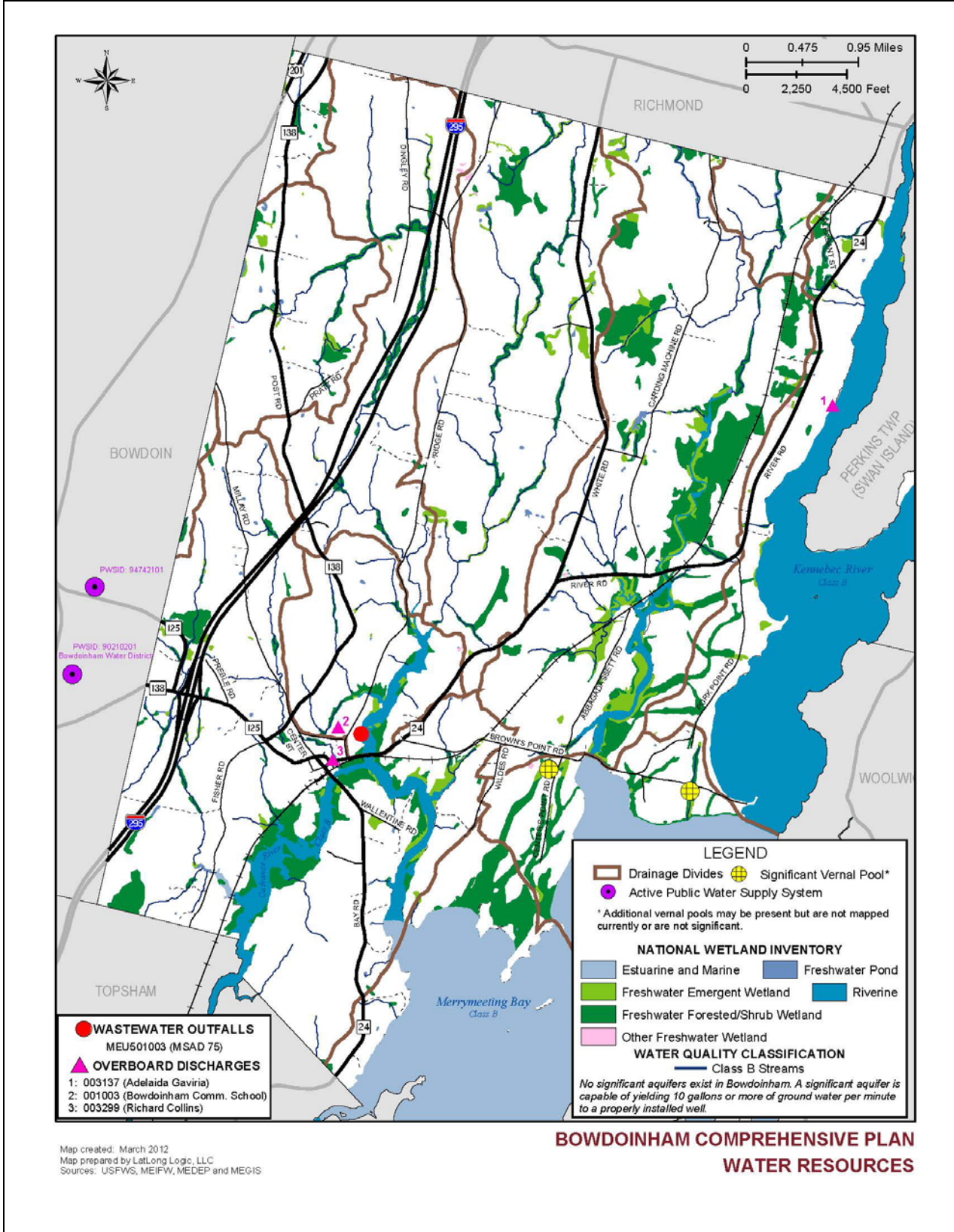
Map created: March 2012
 Map prepared by LatLong Logic, LLC
 Sources: Town of Bowdoinham, USDA-NRCS and MEGIS

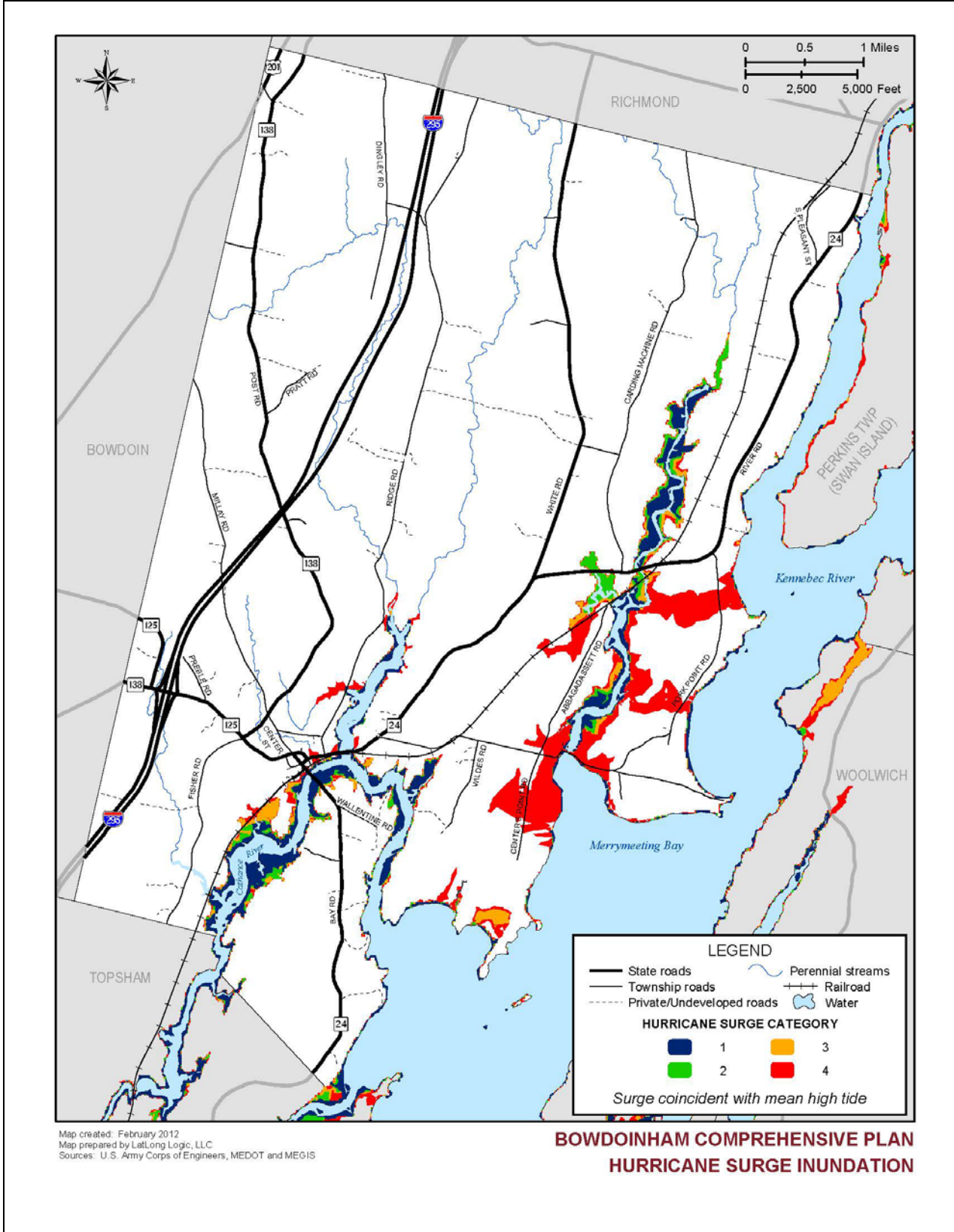
**BOWDOINHAM COMPREHENSIVE PLAN
 FARMLAND SOILS AND HOLLIS SOILS**



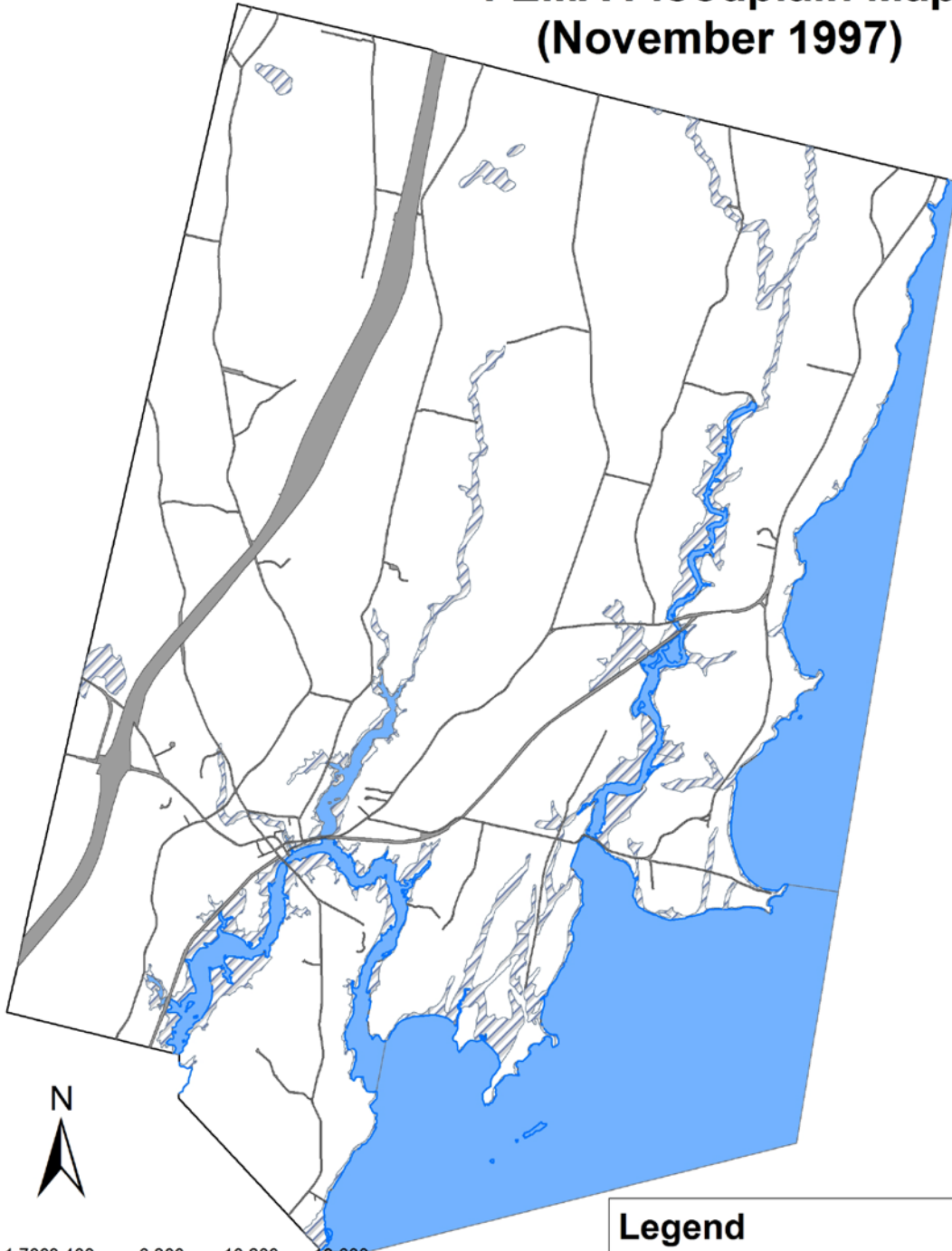
Map created: February 2012
 Map prepared by LatLong Logic, LLC
 Sources: Town of Bowdoinham, USDA-NRCS and MEGIS

**BOWDOINHAM COMPREHENSIVE PLAN
 FARMLAND SOILS AND HYDRIC SOILS**






FEMA Floodplain Map (November 1997)



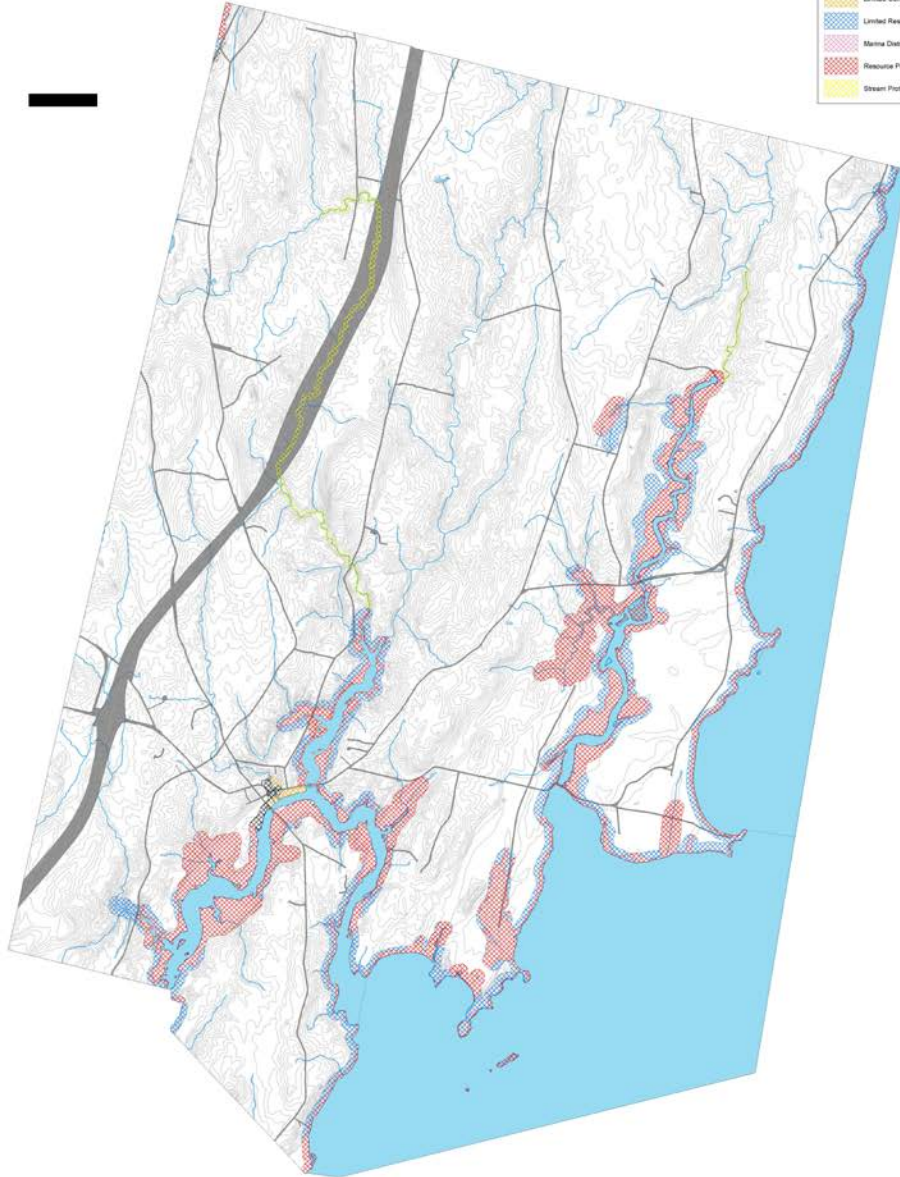
Legend

 FEMA 100-year Floodplain

Town of Bowdoinham Official Shoreland Zoning Map

EFFECTIVE DATE: _____
TOWN CLERK: _____

Legend	
Shoreland Zoning Districts	
District	
General Development District	
General Development II District	
Limited Commercial District	
Limited Residential District	
Marina District	
Resource Protection District	
Stream Protection District	

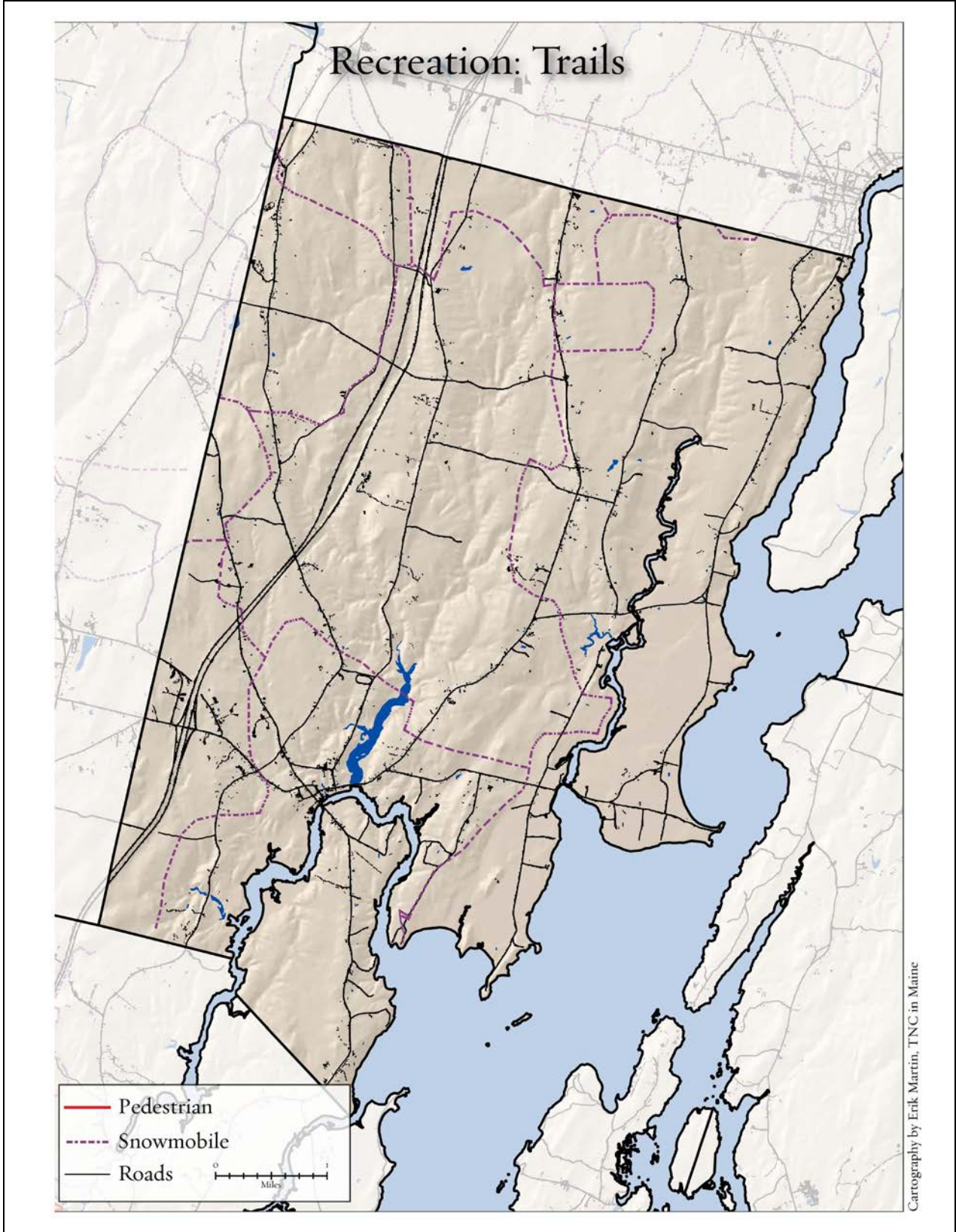


NOTES:

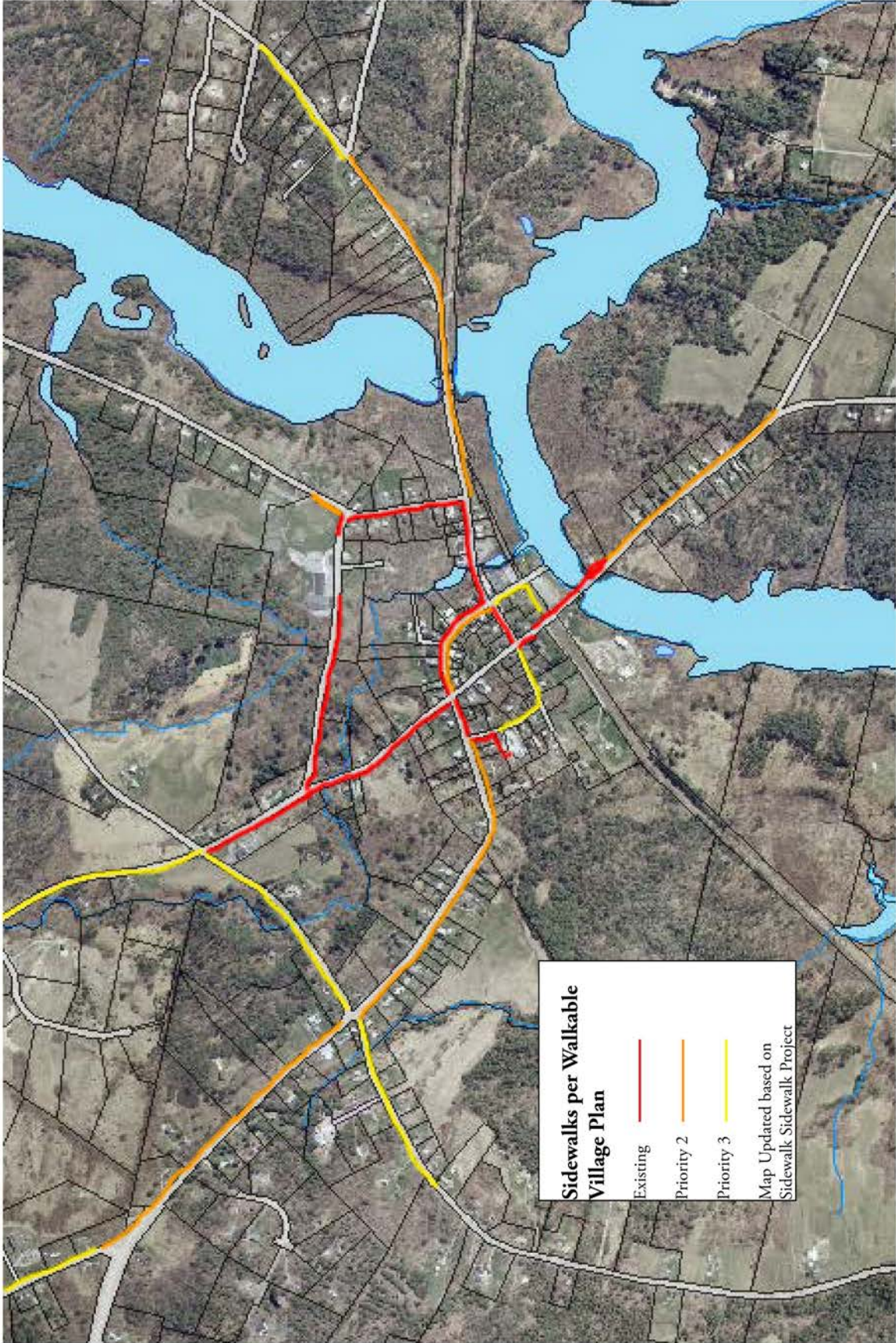
1. THIS OFFICIAL SHORELAND ZONING MAP WAS ADOPTED PROSQUANT TO JUNE 10, 2009 TOWN MEETING, WARRANT ARTICLE 01.
2. THE AREAS OF THE RESOURCE PROTECTION DISTRICT ARE SHOWN ON THIS OFFICIAL SHORELAND ZONING MAP THROUGH USE OF AERIAL DATA. THE ACTUAL, ON-THE-GROUND LOCATION OF THE RESOURCE PROTECTION DISTRICT SHALL BE DETERMINED BY THE DISTRICT'S DESCRIPTION IN THE LAND USE ORDINANCE AND MAY BE LOCATED BY A PROFESSIONAL SURVEYOR.
3. AREAS THAT ARE SHOWN AS RESOURCE PROTECTION ON THIS OFFICIAL SHORELAND ZONING MAP, BUT ARE PROVEN NOT TO BE RESOURCE PROTECTION BASED ON ON-THE-GROUND DETERMINATION SHALL BE CONSIDERED TO BE THE LIMITED RESIDENTIAL DISTRICT.
4. WETLAND AREAS CONTIGUOUS WITH AND AT THE SAME ELEVATION AS THE NORMAL HIGH WATER LINE OF RIVERS AND STREAMS ARE CONSIDERED PART OF THOSE WATERBODIES.

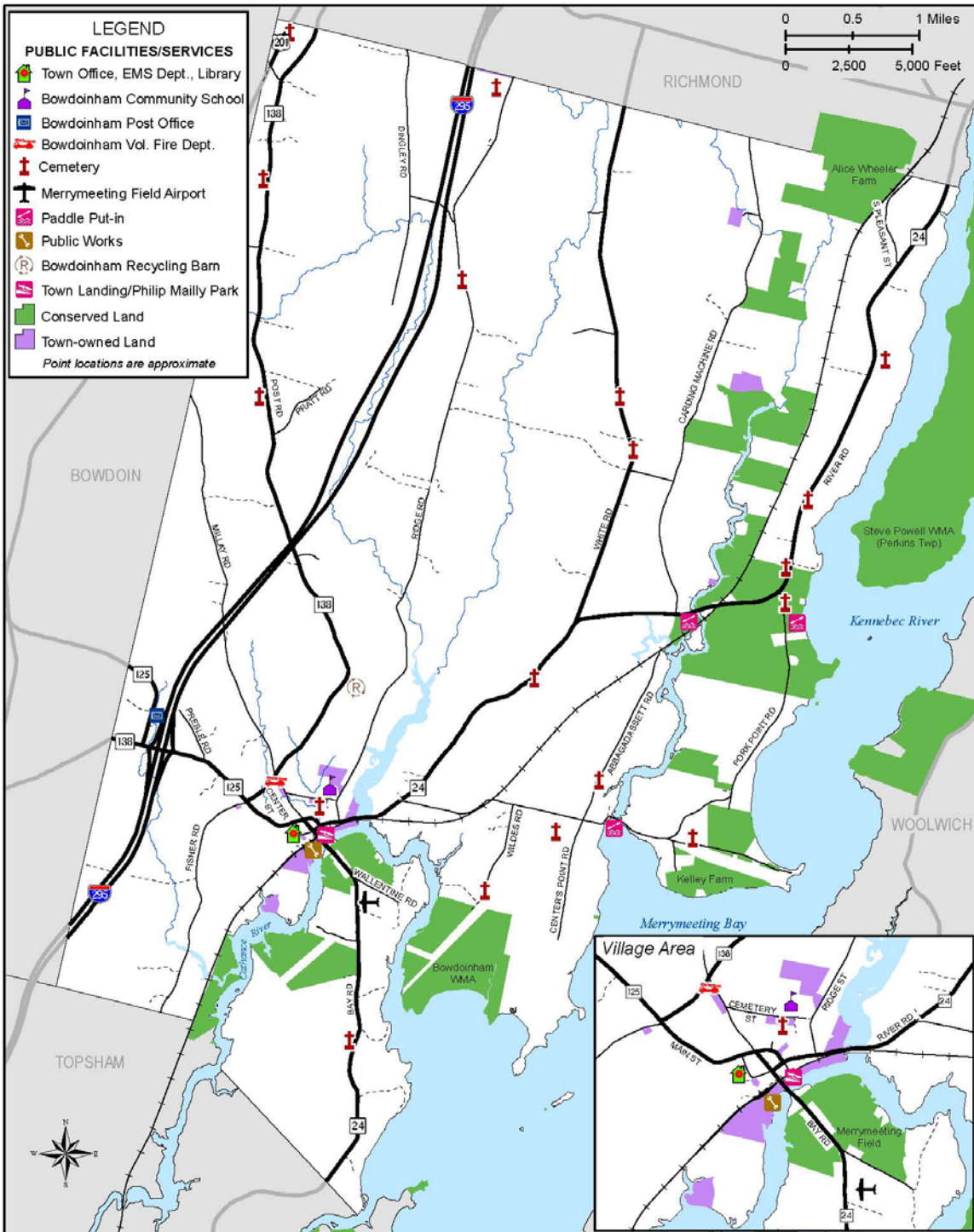
Scale 1:24,000





This map is based on 2011 data, and some snowmobile trails may have changed since then.

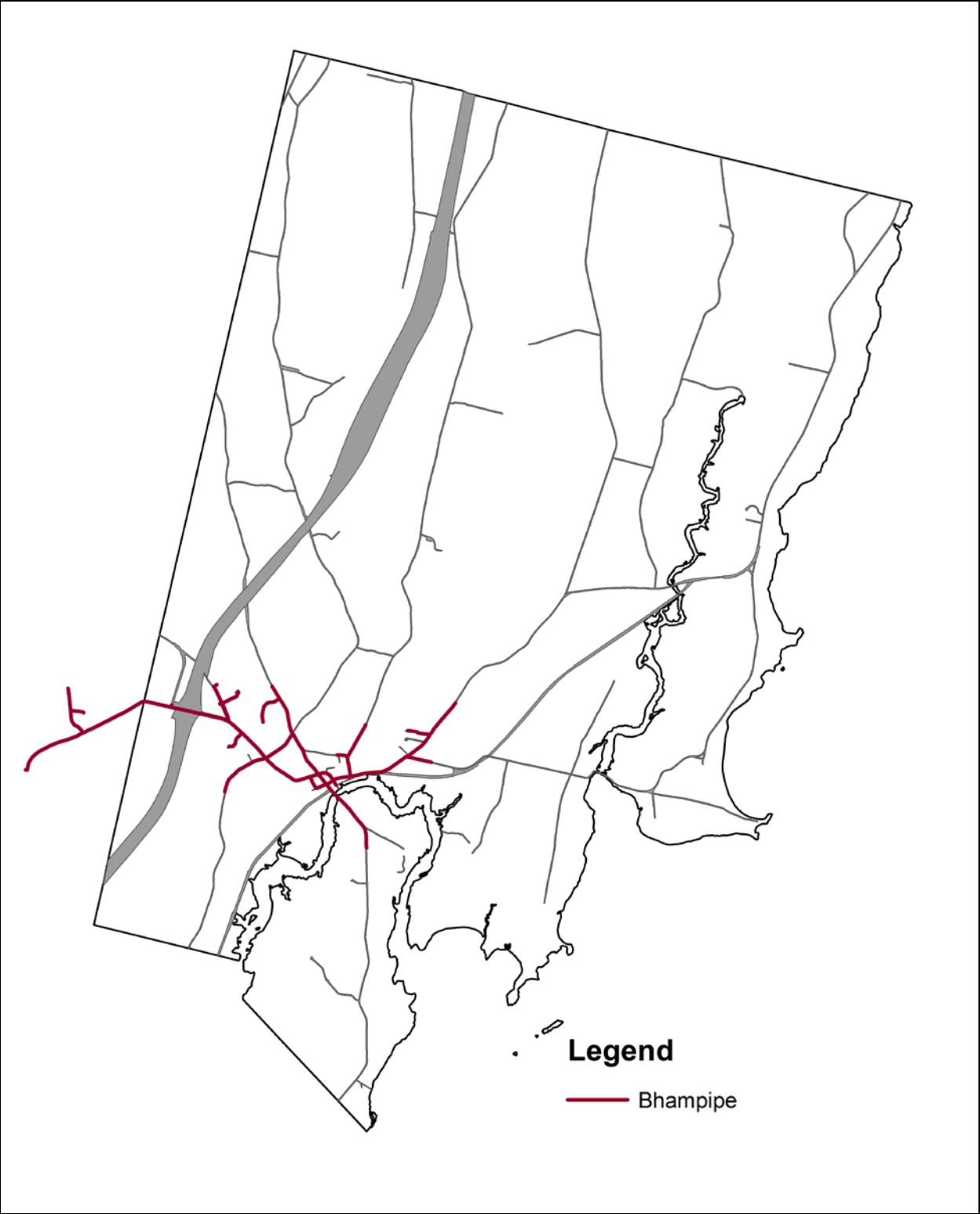




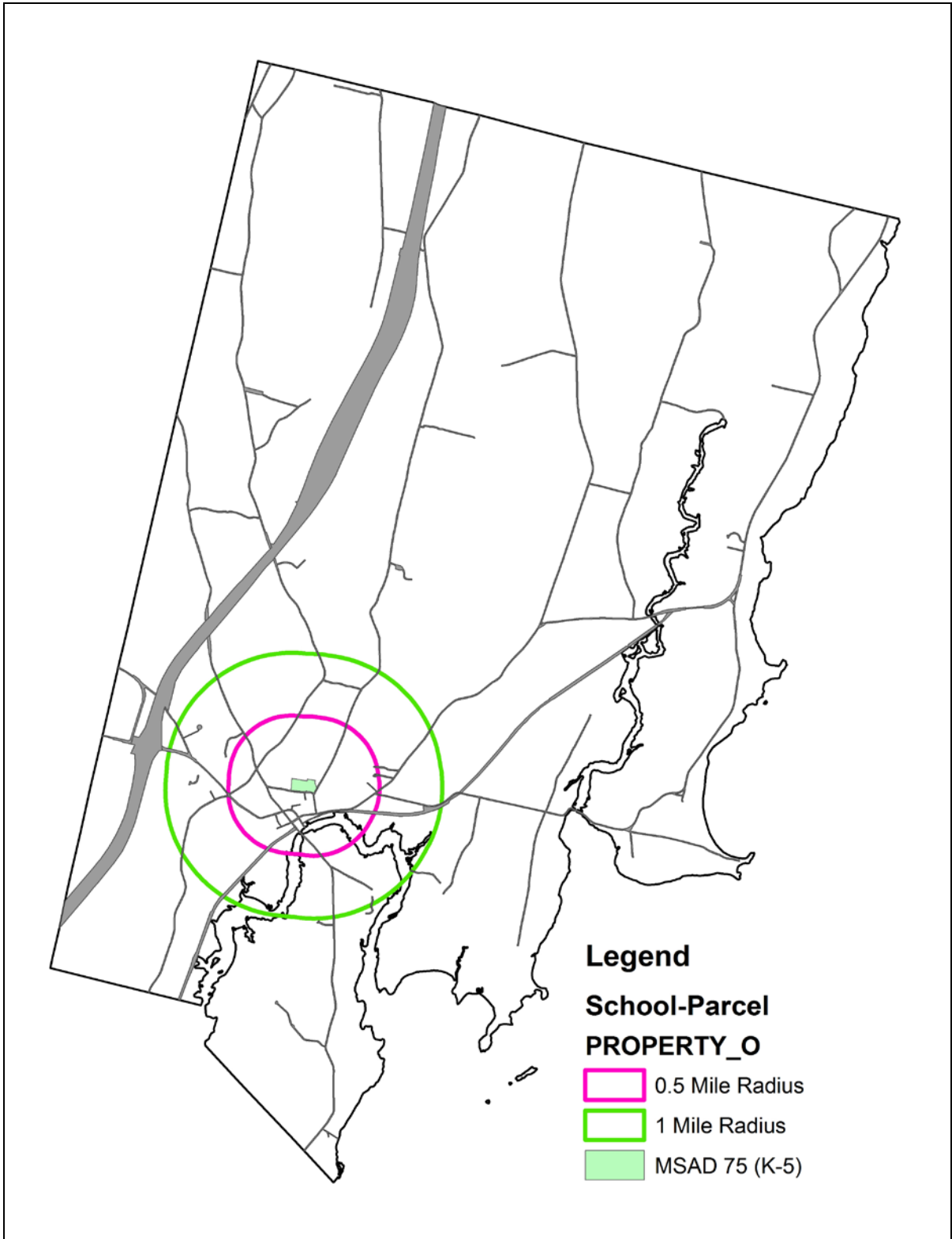
Map created: February 2012
 Map prepared by LatLong Logic, LLC
 Sources: Town of Bowdoinham, MEDOC, MEDOT and MEGIS

**BOWDOINHAM COMPREHENSIVE PLAN
 PUBLIC FACILITIES AND SERVICES**

Bowdoinham Water District Service Area Map



Area within 1 mile of Bowdoinham Community School



REGIONAL COORDINATION

Economy

Our businesses and residents work across town boundaries so it is important that our town government does too. Currently, the Town participates in the regional efforts of Midcoast Economic Development District and Midcoast Council of Governments, as well as sits on their Board of Directors and Executive Committee. The Town is also a member of the Southern Midcoast Maine Chamber and has worked with them to advertise Bowdoinham's businesses.

Agriculture

The Town supports and works with regional organizations, such as Kennebec Estuary Land Trust, Maine Farmland Trust, Maine Department of Agriculture and Maine Organic Farmers & Growers Association to protect farmland and promote agriculture.

Forest Resources

The Town has adopted the State's forestry rules so that timber harvesting rules are consistent with others in our region. The Town would be willing to work with others, but at this time there are no regional projects planned.

Natural Resources

The Town supports and works with organizations, such as Kennebec Estuary Land Trust and Maine Department of Inland Fisheries & Wildlife to preserve land and protect our natural resources. The Town has also participated in a regional sea-level project with Bowdoin College and a marsh migration project with the municipalities of Topsham and Bath.

Water Resources

The Town complies with and enforces several State rules (Shoreland Zoning, Erosion Control, Stormwater, etc.) to preserve the quality of the water we all share. In addition, the Town works with and supports the Bowdoin & Bowdoinham Water District and Friends of Merrymeeting Bay.

Historic and Archaeological Resources

The Town supports the work of the Bowdoinham Historical Society in preserving our rich history. The Town would be willing to work with others, but at this time there are no regional projects planned.

Recreation

The Town works closely with the Ararat Youth Basketball League, Ararat Little League (baseball & softball), and Ararat Soccer League to provide sport opportunities for our elementary school children. The Town also coordinates with Bowdoin College and Lost Valley to provide additional swim and ski opportunities for our residents. In addition, the Town is actively working with the municipalities of Topsham, Richmond and Gardiner and several other groups to plan for the Merrymeeting Trail.

Transportation

Our transportation network extends outside of our Town boundaries, therefore the Town works with our neighbors and region on transportation issues. The Town coordinates plowing on several roads with the Town of Richmond. The Town participated in the process led by Midcoast Council of Governments to create a Management Plan for the Route 24 Corridor and is now supporting the implementation of the plan. In the future, we look forward to participating in Midcoast Council of Governments public transit study. Additionally, as stated above, the Town is actively working with the municipalities of Topsham, Richmond and Gardiner and several other groups to plan for the Merrymeeting Trail.

Housing

At this time, the Town has no shared resources. The Town would be willing to work with others, but at this time there are no regional projects planned.

Public Facilities and Services

The Town works with lots of other municipalities, regional organizations and other groups to provide services for our residents. From our schools, Bowdoinham is part of MSAD 75 School District, which includes Bowdoin, Topsham and Harpswell. To our emergency personnel, who plan, coordinate, train and work with our neighbors and our region. The Town participates in the regional efforts of Midcoast Economic Development District and Midcoast Council of Governments, as well as sits on their Board of Directors and Executive Committee.

Fiscal Capacity and Capital Investment Plan

At this time, the Town has no shared resources. The Town would be willing to work with others, but at this time there are no regional projects planned.

PUBLIC PARTICIPATION SUMMARY

Comprehensive Planning Committee

Members

The Town formed a Comprehensive Planning Committee (CPC) to update the Town's Comprehensive Plan. The Town advertised for members through the Town's Bowdoinham News, Town's Website and existing Town Committee's, in order to form a well-rounded, diverse committee. The Comprehensive Planning Committee was formed in January of 2011 with the following members:

- Albert Stehle – Albert has been a self-employed contractor since 1978 and has lived in Bowdoinham even no longer. In his spare time, Albert enjoys cleaning and fixing up old cemeteries and has served as the coordinator for Cemetery Clean-up Day. Recently, Albert has purchased and begun rehabilitating the old Ridge Road Church.
- Brad Foley – Brad has worked for the Maine Department of Transportation for more than 25 years. He is currently the Highway Program Manager tasked with oversight of the design and construction of Maine's roadways. He is a graduate of the University of Vermont with a Bachelor's Degree in Civil Engineering and is registered as a PE in the state of Maine. Brad has served the town as a member of the Town Hall renovation committee and as a member of the Biking, Walking, and Paddling Group. Brad and his wife Jen have lived in Bowdoinham for over 20 years and have enjoyed working on improvements to their house for all those years.
- Brant Miller – Brant is the Chief Mechanical Engineer for BaselineUS LLC. He provides LEED commissioning services and refrigeration system design for the food service industry and is licensed as a Professional Engineer. Brant is also a sheep farmer and has held many leadership roles in both state and national sheep industry organizations. Brant has served on the Bowdoinham Selectboard (2 terms), Finance Advisory Committee, Solid Waste Committee, and others he can't remember. He is currently serving on the Comprehensive Planning Committee, Bowdoinham Energy Committee, and has been a Trustee for the Bowdoinham Water District for over 20 years. In his spare time, he keeps honeybees, and volunteers for trail maintenance at Baxter State Park and on the Appalachian Trail.
- Brian Smith – Brian is a surveyor who owned his own business, Brian Smith Surveying for 38 years. Brian has served on several different Town committees and boards since 1975, but currently serves on the Town's Community Development Advisory Committee, whose purpose is to develop and assist in plans designed to support and enhance community and economic development in the Town of Bowdoinham. In his spare time, Brian enjoys fishing, woodworking, being outdoors and spoiling his granddaughter.
- Cynthia Lamoreau, Chair – Cyndie works at LL Bean in their Direct to Business Division. Cyndie currently serves on the Maine Archaeological Society, Board of Directors and in the past has served on the Androscoggin County Chamber of Commerce, Central Maine Health Care Associates and Southern Mid Coast Maine Chamber of

Commerce. Cyndie was raised in Bowdoinham and returned 20 years ago. In her spare time Cyndie enjoys gardening, archaeology, local history; music of many styles, going to Bluegrass Festivals, home food production and preserving and working on her small farm.

- David Whittlesey – David moved to Bowdoinham in the mid-70's and taught and coached hockey at Mt Ararat before working internationally for 25 years. Since returning to Bowdoinham in 2004 he has since served as a Member and Chair on the Selectboard, and helped to form the Bowdoinham Community Development Initiative, BCDI, a local non-profit of which he is currently the consulting manager.
- Felicity Beede – Felicity was born and raised in Brunswick but lived in Bowdoinham during her late teens and early twenties. After marrying, and starting a family that has since grown to two sons and two daughters, her husband Jon begged a return to Bowdoinham. Not only did he get his wish, Felicity and Jon recently moved into the house they built last summer and fall. Felicity has taught 7th grade in Brunswick for 17 years.
- Heather Cox – Originally from Central Maine, Heather first moved to Bowdoinham in 1997. Heather and her husband own Casco Bay Frames in Portland and are raising two girls and many pets. For a period of about ten years, they purchased, renovated and sold or rented real estate. Heather is on the library finance committee and volunteers at the school library.
- Joanne Joy, Vice Chair – Joanne Joy is the Executive Director of Healthy Communities of the Capital Area, a Healthy Maine Partnership, located in Gardiner that serves communities in southern Kennebec County and Richmond. Her expertise is in policy and environmental changes to decrease tobacco use and exposure, prevent substance abuse, improve access to physical activity and to improve nutrition including access to local foods. She is an experienced facilitator and public health planner. Joanne enjoys gardening, hiking, kayaking, and camping and family. The CPC is Joanne's first Bowdoinham committee participation. She also serves of the Chair of both the Richmond Area Health Center Board of Directors, and HealthReach Community Health Centers Board. She is on the Executive Committees of the Statewide Coordinating Council for Public Health that advises the Maine CDC, and the Maine Network of Healthy Communities. She is also a member of multiple public health associations in Maine. Joanne grew up in Bucksport on a farm with 8 siblings and is pleased to be a part of the resurgence of farming and local foods that is part of the fabric of this community. Joanne is married, has 3 adult children and 2 young grandsons.
- Paul Beltramini - Paul and his wife have made Bowdoinham their home for almost 30 years, and their two children were born and raised here. For the last 18 of those years Paul has worked at MaineGeneral Medical Center in Augusta as an acute care Physical Therapist. Paul completed his under-graduate degree in Human Ecology and had worked the previous 20 plus years as a primarily self-employed carpenter/builder with a particular interest in energy-efficient design and construction. In addition to the Comp. Plan Committee, Paul has been a member of the Bowdoinham Planning Board for 8 years now. When not working or at committee meetings, Paul's interests include music, photography, travel, and about any activity that gets him outdoors. In all his work and play Paul maintains his interest as a Human Ecologist in bettering his understanding of the relationships between humans and their natural and social environments.

- Pete Galle – Professionally after a stint as an officer in the Air Force Pete was a banker heavily involved in home construction and purchase financing. Since 1982 Pete has been self-employed as a Certified General Real Estate Appraiser working in both the residential and commercial/industrial markets. Pete is an affiliate member of the Appraisal Institute. Pete is also co-owner of Apple Creek Farm, founded in 1985. Pete is the coordinator for the Bowdoinham Farmers’ Market and is a member of the Merrymeeting Grange. Pete has also served on the Planning Board for over ten years and has served on three Comprehensive Planning Committees.
- Richard Morin – Richard has lived in Bowdoinham since 1968 and has served on several Town Committees and Boards over the years including the Planning Board, Finance Advisory Committee and two previous Comprehensive Planning Committees. Richard served in the Air Force for four years before becoming a licensed engineer in 1974. Richard and his family (wife and son) operate a small beef farm on the River Road.
- Sally Hildreth – Sally is a Senior analyst for a software development company located in Baltimore. Sally has a small farm with horses, cows, dogs and cats. In addition to serving on this Comp Plan Committee, Sally serves on Town’s Cable-Internet Committee.
- Tom Deforeest – Tom is a retired carpenter who has lived in Bowdoinham since 1973. Tom is a member of the Town's energy committee as well as the Bowdoinham Historical Society.

Committee Meetings

The Comprehensive Planning Committee set a regular meeting date of the first Tuesday of the Month with some exceptions and several extra meetings. All committee meetings have been open to the public. All meetings have been advertised on the Town’s website and their regular meeting schedule has been periodically advertised in The Bowdoinham News.

The CPC held committee meetings on the following dates:

- | | |
|----------------------|---------------------|
| • January 11, 2011 | • March 6, 2012 |
| • February 1, 2011 | • April 3, 2012 |
| • March 1, 2011 | • May 1, 2012 |
| • March 15, 2011 | • June 5, 2012 |
| • April 5, 2011 | • September 4, 2012 |
| • May 3, 2011 | • October 2, 2012 |
| • June 7, 2011 | • November 5, 2012 |
| • August 2, 2011 | • December 4, 2012 |
| • September 6, 2011 | • January 8, 2013 |
| • October 4, 2011 | • February 11, 2013 |
| • November 1, 2011 | • February 19, 2013 |
| • December 6, , 2011 | • April 2, 2013 |
| • January 3, 2012 | • May 7, 2013 |
| • January 10, 2012 | • August 6, 2013 |
| • February 7, 2012 | • September 3, 2013 |

- October 1, 2013
- November 6, 2013
- December 3, 2013
- January 7, 2014
- February 4, 2014
- March 4, 2014
- April 1, 2014
- June 3, 2014 (planned)

All meeting minutes are available at the Town Office.

Comprehensive Planning Process

The Committee created this Comprehensive Plan using the process outline below. Throughout this process, the Committee used the Town's website, facebook page and newsletter to inform residents of their work, upcoming workshops and surveys. All meeting minutes and survey results are available at the Town Office.

Committee Start-up - *January-March 2011*

The Committee's first order of business was to create their Working Agreement (committee rules) and determine the process they would use for creating this comprehensive plan.

Visioning - *April-August 2011*

The Committee began their comprehensive process by creating the Vision, of which the goals and strategies would be built on. To create the Vision Statement, the committee conducted the following:

Public Workshops

The Committee held three public workshops to create the Vision Statement. To ensure a fair, efficient, and productive process, Craig Freshley of Good Group Decisions was hired to facilitate the meetings.

The agenda for May 12, 2011 and May 18, 2011:

- Welcome and Introductions
Joanne Joy, Committee Chair, Nicole Briand, Town Planner, and Craig Freshley, Facilitator, will explain the following:
- Why we are developing a Vision Statement - why it is important to the Town
 - About the Visioning Process – this meeting in context
 - About tonight's meeting – agenda and ground rules
- Specific Questions
 - In a fun, highly visual, interactive way, we will discuss the following questions:
 - What do you like about the Town of Bowdoinham?
 - Ten years from now, what do you want the Town of Bowdoinham to be like?
 - What other questions should we be asking?

- Conclusions?
Participants are not expected to come to a final agreement about what Bowdoinham should be like in the future, but if there happens to be clear consensus on any aspect of the Town's future, such conclusions will be identified.
- Closing Remarks
This will be a chance to Committee members and/or the Town Planner to make any final comments.

The agenda for June 22, 2011:

- Welcome and Introductions
 - Cynthia Lamoreau, Committee Chair, and Craig Freshley, Facilitator, will explain the following:
 - Why we are developing a Vision Statement - why it is important to the Town
 - About the Visioning Process – this meeting in context
 - About tonight's meeting – agenda and ground rules
 - We will make sure everyone has a chance to introduce themselves, including members of the Comprehensive Planning Committee
- The Draft Vision Statement
Craig Freshley will present and explain the vision statement that he and the Comprehensive Planning Committee drafted in response to public input gathered to date via public input meetings and surveys. There will be a chance to ask clarifying questions about the vision statement.
- Feedback on the Draft Vision Statement
Everyone will be invited to give reactions to the vision statement, which Craig will note on the wall for all to see.
- Conclusions?
Participants are not expected to come to a final agreement about changes to the draft vision statement but if there happens to be clear consensus, such conclusions will be identified.
- Closing Remarks
This will be a chance to Committee members and/or the Town Planner to make any final comments.

Public Outreach

Committee members met with the following groups to ask and following questions:

Questions-

- What do you like about B'ham?
- In 10 years from now, what would you like B'ham to be like?
- What else should we be asking?

Groups-

- 250th Anniversary Committee - May 23, 2013
- Board of Appeals - May 23, 2011

- Community Development Advisory Committee - May 26, 2011
- Finance Advisory Committee - May 26, 2011
- Fire Department - May 23, 2011
- Planning Board- May 26, 2011
- Select Board - April 26, 2011
- Bowdoinham Community School Parent Group - April 26, 2011
- Boy Scouts - May 21, 2011
- Cathance River Education Alliance - June 21, 2011
- Friends of Merrymeeting Bay - April 27, 2011
- Merrymeeting Arts Center - April 18, 2011
- Village Seniors (luncheon) - May 26, 2011
- ACCESS Health - June 16, 2011

Visioning Survey

Committee conducted a Vision Survey, which was created by Craig Freshley of Good Group Decisions for the Committee's use. Then a second survey was done to gather input on the draft Vision Statement.

Goals - August 2011 - February 2012

Using the State's list of Goals and the feedback the Committee gathered through the visioning process, the Committee created a draft list of goals. The Committee then used the feedback gathered from public outreach and a goals survey to create the goals for this Plan.

Goals Survey

The Committee conducted a Goals Survey to gather input on the proposed Goals.

Public Outreach

Committee members met with the following groups to discussed Goals for Bowdoinham:

- Community Development Advisory Committee - September 20, 2011
- Cable-Internet Cable - September 22, 2011
- Bowdoinham Public Library - October 20, 2011
- Planning Board - September 22, 2011
- Select Board - October 11, 2011
- Bowdoinham Community School Parent Group - October 20, 2011
- Table at Celebrate Bowdoinham - September 10, 2011

Policies & Strategies including Inventory & Analysis - January 2012 - January 2013

Using the State's list of policies and strategies and the feedback the Committee gathered through the public workshops and outreach, the Committee created the recommendations for this Plan.

Public Workshops

Agriculture Workshop - February 28, 2012

A letter inviting farmers to this workshop, as well as a survey was mailed directly to all Bowdoinham farmers and over fifty people came to this workshop.

Agenda

- Review Agricultural Data
- Identify Needs
- Presentations
 - Tori Lee Jackson, Extension Educator Androscoggin and Sagadahoc Office
 - Stephanie Gilbert, Farm Viability & Farmland Protection Specialist for Maine Dept. of Agriculture, Food & Rural Resources
 - Stacy Benjamin, Municipal Outreach Contractor, Maine Farmland Trust
- How can we support agriculture and reach our goals?
Goals for Agriculture (developed by Comprehensive Planning Committee)
 - To enhance the viability of agriculture so that it will remain an economic strength for future generations.
 - To promote buying local foods and enhance opportunities to obtain local foods.
 - To safeguard our agricultural resources.
 - To encourage economically viable, ecologically sound and socially responsible agriculture.
- Thank you for joining us!

Economy Workshop - March 20, 2012

This was a joint workshop with Community Development Advisory Committee, to which all Bowdoinham businesses were invited.

Agenda

- Community Development Advisory Committee Update
- Economy Data Overview
- How can we reach our goals?
Goals for Economy (developed by Comprehensive Planning Committee)
 - To promote an economic climate that increases local job opportunities, our sense of community and overall economic well-being.
 - To encourage small businesses & entrepreneurship.

- To encourage development that enhances our village and community.
- To enhance our economic opportunities by making the most of our recreational, agricultural, natural, marine, historical and cultural resources.
- Thank you for joining us!

Policies & Strategies Workshops

Once again, the Committee hired Craig Freshley of Good Group Decisions to facilitate these workshops. For these workshops, the vision statement, goals, inventory (including maps) and analysis were provided to participants. Large-scale (24x36in) inventory maps were placed with worksheets for participants to list their suggested strategies. Given the number of topic areas the workshops were split as follows:

Resource Workshop - April 18, 2012

- Forest Resources, Natural Resources, Water Resources, Historical & Archeological Resources, and Recreation

Infrastructure Workshop - April 25, 2012

- Transportation, Housing, Public Facilities & Services, Fiscal Capacity & Capital Investment, and Recreation

Agenda (for both workshops)

- Welcome and Introductions
Cynthia Lamoreau, Committee Chair, and Craig Freshley, Facilitator, will explain;
 - About the Comprehensive Planning Process – this meeting in context
 - About tonight’s meeting – agenda and ground rules
 Everyone will introduce themselves, including the Comprehensive Planning Committee
- Our Vision and Goals
 - Craig Freshley will present and explain the vision statement.
 - Members of the Committee will present highlights on each of the five topics.
- Feedback on How to Achieve the Goals
In a fun and dynamic exercise participants will discuss topics in small groups. Each small group will discuss what the town should do for each topic. Fasten your seat belts!
- Summary Reports
As a full group we will hear summary reports from the small groups and briefly discuss.
- Closing Remarks
Committee members and/or the Town Planner will make final comments.

Public Outreach

Committee members met with the following groups to discussed the strategies for Bowdoinham:

- Biking, Walking & Paddling Group - February 27, 2012
- Fire Department - April 26, 2012

- Merrymeeting Arts Center - March 5, 2012
- Community Development Advisory Committee - February 21, 2012
- Bowdoinham Public Library - March 29, 2012
- Planning Board - May 24, 2012
- Select Board - April 10, 2012
- 250th Anniversary Committee - May 2, 2012

In addition, the Committee requested that an agriculture work group be established to create the recommendations for the agriculture section. As a result, two work groups were formed and met on the following dates:

- older farmers, who were mostly animal farmers met on March 22 & 29, 2012
- younger farmers, who were mostly organic vegetable farmers met on March 21 & 28, 2012.

Agriculture Survey

The Muskie School Graduate Class developed a survey for the Comprehensive Planning Committee to gather information from Bowdoinham farmers.

Future Land Use - December 2012 - December 2013

The Committee began the future land use section by creating the Future Land Use Map. The Future Land Use Map was created based on the feedback the Committee revised at the public workshops, the inventory maps, and the state's guidelines for growth, rural and transitional areas. Once the Future Land Use Map was complete the Committee developed a list of possible Future Land Use strategies, based on the state's list and June's Panel discussion. The committee gathered feedback on the list of possible strategies from the public workshops and two surveys, in order to create the recommendations in this plan.

Public Workshops

The Committee hired Craig Freshley of Good Group Decisions to facilitate all of these workshops.

Mapping Workshops - March 20 & 21, 2013

Participants were provided with the inventory mapping and information about the state's guidelines for growth, rural and transitional areas.

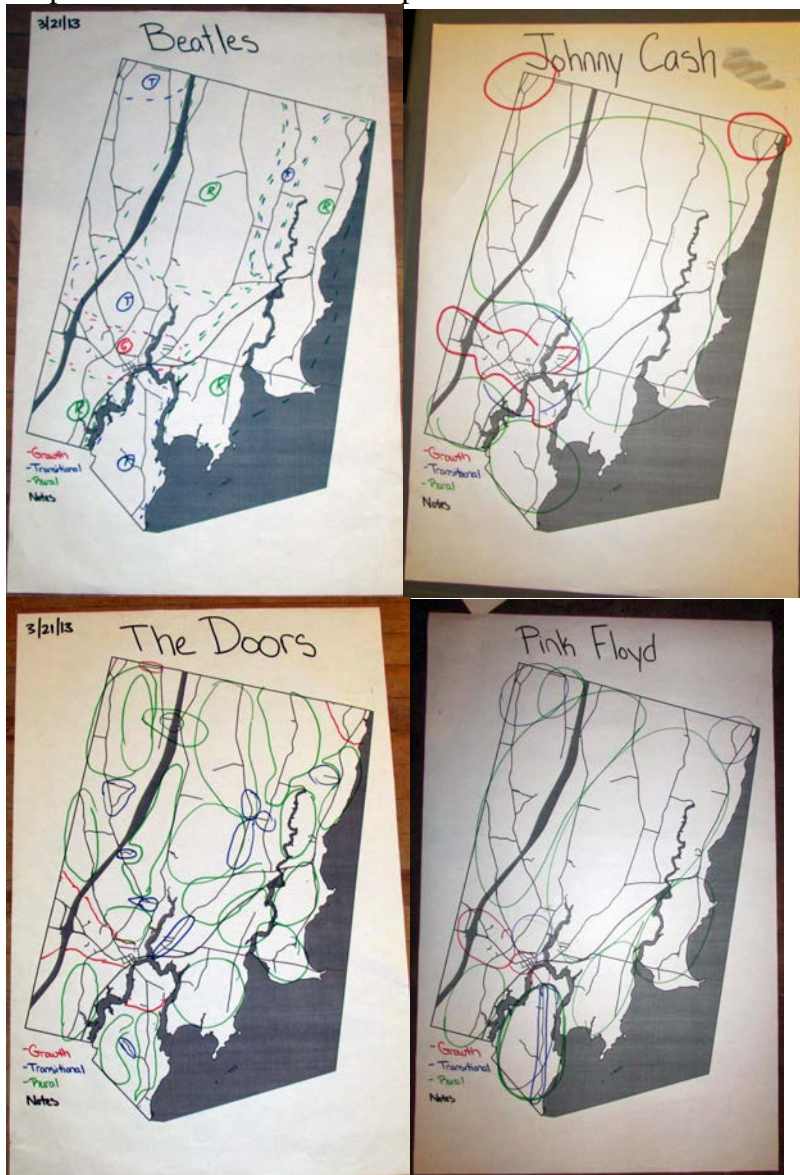
Agenda

- Setting the Stage
 - Welcome
 - About the Meeting - Craig Freshley, Facilitator, will explain how the meeting will work.
 - Land Use Mapping Requirements and Current Maps

Nicole Briand, Town Planner, will explain some state requirements and other parameters to be mindful of as we discuss growth, rural, and transition areas. She will also explain several resource maps on that depict current characteristics of our town.

- Discussion and Mapping in Small Group
In small groups armed with maps and markers, we will sketch those parts of town which should appropriately be growth areas, rural areas, and transition areas.
- Full Group Mapping Review and Discussion
In a fun, facilitated, full group discussion we will review and discuss all the maps created by the small groups. We will identify commonalities and understand discrepancies.
- Closing Comments
This is a chance for any last words from participants and closing comments.

Maps created at these workshops -



Future Land Use Map Discussion - April 23, 2013

The purpose of this meeting was to discuss the proposed Future Land Use Map created by the Committee.

Agenda

- Opening
 - Welcome – Cynthia Lamoreau, Comprehensive Planning Committee Chair
 - About the meeting – Craig Freshley, Facilitator
- How We Got Here
Explanation of the process leading to the development of the proposed growth and rural map.
- The Proposed Map Explained
Why the map is drawn the way it is.
- Questions and Concerns
We will clarify questions and identify concerns.
- Resolution of Concerns
To the extent possible we will try to resolve concerns and differing points of view.
- Closing Comments

Land Use Panel Discussion - June 4, 2013

The purpose of this meeting was to discuss land use strategies that the Town could use to achieve its vision.

Agenda

- Opening
Welcome – Cynthia Lamoreau, Comprehensive Planning Committee Chair
- Panel Introductions
 - MacGregor Stocco
MacGregor holds a master's degree in urban and environmental planning from the University of Virginia. Mac worked for the Kennebec Valley Council of Governments for 2 years as a community planner, prior to joining the state. He has been a land use planner for the state for 4 years. He was originally hired in the Land Use Program at the State Planning Office, but since the government restructuring am now in the Municipal Planning Assistance Program at the Department of Agriculture, Conservation and Forestry. Mac lives in Belgrade with his wife, Janet, and three children.
 - Steve Walker
Steve is a wildlife biologist who currently works as the mid-coast region (including Bowdoinham) project manager for Maine Coast Heritage Trust. Prior to his work at MCHT, Steve was coordinator of the Maine Department of Inland Fisheries and Wildlife's Beginning with Habitat program that assists municipalities and local land trusts with strategic conservation planning efforts. Steve also worked as the Natural Resources Planner for the Town of Brunswick

from 2001 to 2006. Prior to that Steve worked as a land use consultant for several years. Steve has degree in Environmental Studies from Brown University and Wildlife Ecology from the University of Maine, Orono. Steve lives in Brunswick where he is a member of the local planning board and board member of the Brunswick-Topsham Land Trust.

- Discussion
Land use strategies that Bowdoinham can use to achieve its goals. How do they work?
What are their benefits and disadvantages?
- Closing Comments

Strategy Workshop - September 10, 2013

The purpose of this workshop was to discuss possible land use strategies to achieve the Vision for Bowdoinham.

Agenda

- Opening
 - Welcome – Cindy Lamoreau, Comprehensive Planning Committee Chair
 - About the meeting – Craig Freshley, Facilitator
- Context
 - Our Vision – Explanation of the process that resulted in the vision statement and brief overview of what it says.
 - Future Land Use - Explanation of how future land use needs to support the vision.
- Discussions by Topic
In small groups we will discuss the following five topics.
 - Lively and attractive village
 - More agricultural land
 - Woods, wetlands, waterfronts highly valued
 - Rural character, history, and beauty preserved
 - Affordable and diverse housing

ALL strategies will be briefly explained before we break into small groups. The goal of each small group will be to identify the most promising strategies in their topic area. We will have these discussions in two rounds so each person will be able to discuss two topics. After each round, small groups will have a chance to briefly report on their priorities.
- Closing Comments

Strategy Workshop - October 22, 2013

The purpose of this workshop was to discuss proposed land use strategies recommended by the Committee.

Agenda

- Opening

- Welcome – Cindy Lamoreau, Comprehensive Planning Committee Chair
- About the meeting – Craig Freshley, Facilitator
- Context
 - Our Vision – Explanation of the process that resulted in the vision statement and brief overview of what it says.
- Land Use Strategy Discussion
- Closing Comments

Future Land Use Strategies Surveys

The Bowdoinham Comprehensive Planning Committee conducted two future land use surveys to gather public on possible future land use strategies.

Finalize Comprehensive Plan - *January-May 2014*

The Committee scheduled four public hearings to discuss this Plan with the public.

- February 11, 2014 -
- February 25, 2014
- March 25, 2014
- May 6, 2014

ADDITIONAL STUDIES

Muskie School

During the fall semester of 2011 at the University of Southern Maine, the students of course CPD 660: Introduction to Community Planning at the Muskie School of Public Service were asked to support the Comprehensive Planning Committee of the Town of Bowdoinham, Maine in their planning efforts. Bowdoinham Town Planner, Nicole Briand, visited the class to describe the town and answer questions. The students visited the town and were given a tour by several Planning Committee members. This was followed by a discussion with the full Committee to gain a deeper understanding of the needs and desires of the town. From this introduction the students recognized several areas they felt needed to be focused on in their research. These included: land use, agriculture, forestry, the condition of the downtown, creating a development area (perhaps at the exit 37 area), housing issues, the need for internet, considering how to keep young adults interested in their home town, and outdoor recreation opportunities as a potential area for economic development. The Class's "*Report to the Comprehensive Planning Committee, Town of Bowdoinham*" is available at the Town Office and on the Town's website.

Aging in Place Needs Assessment

In 2012, Patricia Oh, MA, LMSW conducted in aging in place needs assessment for the Town as part of her graduate work at the University of Massachusetts, Boston. Patricia conducted the study through use of focus groups, which included elderly town residents and service providers. The study "*Aging in Bowdoinham, Maine 2012*" is available at the Town Office and on the Town's website. This study led to the Town creating an Advisory Committee on Aging whose purpose is to create, where needed, a menu of opportunities to allow people to continue to live in Bowdoinham as they age.

Rural Active Living Assessment

In 2013, Colleen Fuller, MPH of Access Health - a Healthy Maine Partnership conducted a Rural Active Living Assessment for the Town. To conduct the assessment, Colleen met with a workgroup made-up of Bowdoinham residents with representation from the Town's Biking, Walking & Paddling Group, Committee on Aging, Comprehensive Planning Committee, Recreation Department and Planning Department. This assessment is available at the Town Office and on the Town's website.