

The Penobscot Valley Community Greenprint

A Regional Vision for Environmental and Economic Opportunity

A Project of the Maine CommunityScape Initiative



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Founded in 1972, The Trust for Public Land is a national non-profit organization that conserves land for people to enjoy as parks, gardens, and other natural places, ensuring livable communities for generations to come.

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Acknowledgments

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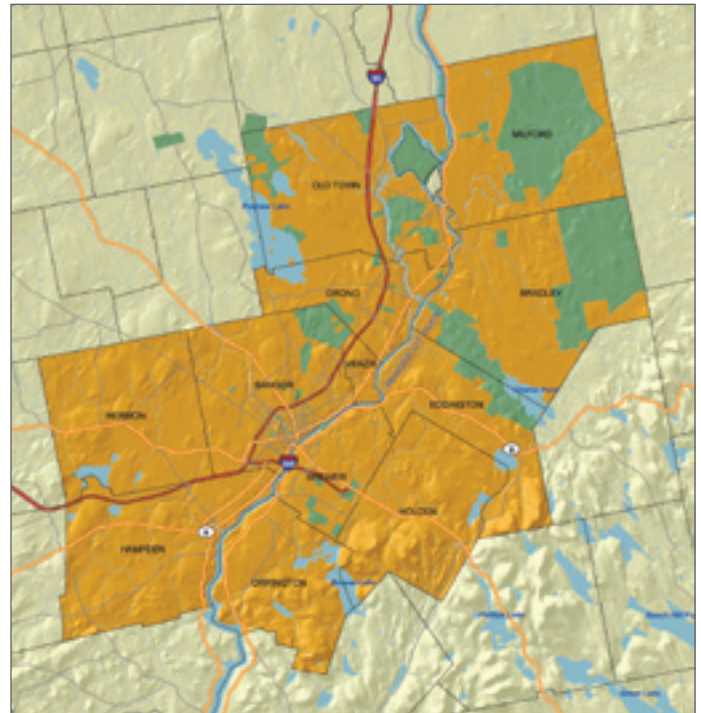
Executive Summary

To preserve a cherished heritage that is tied intimately to the landscape and to support a vibrant economy, twelve Penobscot Valley communities collaborated to address land use and conservation on a regional scale. Bangor, Bradley, Brewer, Eddington, Hampden, Hermon, Holden, Milford, Old Town, Orono, Orrington, and Veazie put their heads and hearts together between March 2007 and June 2009 for the Penobscot Valley Community Greenprint, a project led by The Trust for Public Land, the Penobscot Valley Council of Governments and the Bangor Land Trust.

The Greenprint presents a first-ever effort to identify the characteristics of the region that make it special, sustain its quality of life, and attract people and businesses; to map these characteristics; and to prioritize strategies for their protection. From a conservationist's perspective, the landscape of the Penobscot Valley is a rich gateway to the Great Northern Forest, a landscape dotted with both active working lands and forests, knit together with acres of verdant open space and clear water. In the eyes of planners and economic development professionals focused on an "asset based" approach to progress, the character of this landscape represents the region's chief asset, a foundation for revitalized economic prospects.

With this Greenprint, the communities of the Penobscot Valley have sought to identify their unique Quality of Place. With this knowledge in hand, that character can be protected and enhanced to support continued economic development while ensuring the landscape they bequeath to their grandchildren is the landscape they love today.

Greenprint leaders conducted in-depth analyses of the region's demographics, economic indicators, and infrastructure in concert with its natural resources, parks and trails. They reviewed local- and state-level planning policies. Based on phone surveys, one-on-one interviews, public listening sessions, and a stakeholder outreach process, the Greenprint identifies key conservation goals for the Penobscot Valley:



- Protect habitat and unfragmented natural areas
- Maintain scenic values and protect scenic vistas
- Protect working landscapes
- Protect water quality
- Establish areas for public access and recreation
- Create multi-purpose trails

Technical experts and stakeholders refined these goals, taking into account how the goals could be mapped across the regional landscape and what data were available to support them. The project team developed opportunity maps for each goal, showing which lands could be conserved to best meet that goal, and a composite map, showing the land that met multiple goals. Stakeholders considered action strategies – from private landowner incentives to a framework for greater regional cooperation – to implement the Greenprint goals, including knitting together a “funding quilt” of public finance options to realize the park and recreation opportunities identified through the Greenprint.

The Penobscot Valley Community Greenprint Process and Timeline

At-a-Glance
March 2007 – June 2009

RESEARCH AND DATA COLLECTION

Current Conditions Research and Analysis – March–May 2008

Public Opinion Telephone Surveys – May–June 2008

CONSTITUENCY BUILDING

Steering Committee Established – Ensure municipal funding and concert of purpose – March 2008

Stakeholder Group Workshop 1 – Confirming Process and Participants – March 20, 2008

Public Listening Sessions – Gather direct constituent input – May 28 and 29, 2008

Stakeholder Group Workshop 2 – Greenprint Goal Refinement – June 5, 2008

CONSERVATION GOAL MAPPING

Technical Advisory Committee Meeting 1 – October 27, 2008

Stakeholder Group Workshop 3 – Discussion of Non-Mappable Conservation Community Goals – November 13, 2008

Technical Advisory Committee Meeting 2 – November 17, 2008

Technical Advisory Committee Meeting 3 – December 1, 2008

Technical Advisory Committee Meeting 4 – January 16, 2009

Technical Advisory Committee Meeting 5 – February 19, 2009

Stakeholder Group Workshop 4 – Goal Prioritization Exercise – March 12, 2009

Technical Advisory Committee Meeting 6 – March 24, 2009

IMPLEMENTATION STRATEGIES

Stakeholder Group Workshop 5 – Finalizing Maps and Conservation Action Steps – April 30, 2009

FINAL REPORT AND BROCHURE

What is a Greenprint?

A Greenprint is both the process of creating a strategic planning, communication, and decision-making tool, and the powerful Geographic Information System (GIS) tool that is the result of that effort. It is based on local input, priorities, and data sources that are interpreted into a set of maps and interactive computer analyses tools that demonstrate opportunities to effectively and efficiently target public resources toward those areas that meet the greatest community needs.

Greenprinting uses The Trust for Public Land's (TPL) unique application of GIS modeling technology. It helps local governments and communities make informed decisions for rational growth, while promoting and protecting their cherished natural resources.

Greenprinting identifies the best opportunities for new park creation, greenway development, natural resource protection, and connectivity. A Greenprint is not a set of static maps; rather, it is a dynamic, interactive web-based tool that guides actions that will result in healthier, more vibrant and green communities.

TPL's Greenprint process fosters collaboration within the community by bringing together diverse community stakeholders who create easy-to-understand priorities for land conservation. The process then considers these community priorities in combination with broader community-wide environmental, social, economic, educational, cultural and recreational interests and uses them as input along with state and local data to produce graphic results that illustrate the best opportunities for green and open space acquisition. The process involves these key steps:

CONSTITUENCY BUILDING

- Identifying Community Values
- Establishing Conservation Goals and Criteria to Express Community Values

DATA GATHERING AND ANALYSIS

- Understanding Existing Conditions
- Assembling Local GIS Data
- Creating Models
- Ranking Goals and Criteria
- Translating Models into Opportunity Maps

IMPLEMENTATION STRATEGIES

- Identifying Practical Strategies for Implementation
- Developing an Interactive, Internet-based Mapping and Analysis Service

TPL works with communities to fulfill their conservation visions. In so doing, TPL works closely with local leaders, residents and technical experts to ensure that the final recommendations have broad community support and incorporate the best available data and science. TPL begins with local input and information, analyzes the data, and delivers strategic recommendations and tools to engage and inform the recreation and open space policies of elected officials, planning boards, and community leaders.

A GREENPRINT IS NOT

- A map of land-use prohibitions
- Determined by a single perspective
- Limited to only protecting wildlife and biodiversity
- For condemning or taking land



Photo: The Old Town Dam, by Asgeir J. Whitney.

Introduction

Residents of the Penobscot Valley region enjoy a remarkably high quality of life. According to one, there are “lots of small town features, but we’re not missing any of the creature comforts.” Another observes, “The quality of life has to do with the community—large enough to give you what you need but small enough that nine people in a room can make a difference.” Most residents take pleasure in walking around town and running into people they know; being close to shopping, beautiful outdoor space, and all sorts of destinations; and living in a place that is often characterized as peaceful.¹

Residents also describe recent changes to their communities, such as increasing traffic associated with more retail stores and services built outside traditional downtowns. Others talk of the need to more quickly connect trails and protect special places in the face of growth. Some believe development has occurred before communities have had time to fully consider and evaluate its effects. Looking ahead, residents anticipate challenges in the years to come, such as:

- Rising energy costs that are nonnegotiable in a region with bitter winters and the year-round need for automobiles to travel between home and most destinations
- The need for more employment opportunities
- The struggle for municipal financial survival because local governments are strapped for funding to maintain public infrastructure and public safety and educational services
- Environmental concerns related to the loss of open space and increasing water quality threats
- An obesity epidemic. In the words of one resident, “Health care costs are going to be a tremendous issue ... and to have a system of open land that can encourage recreation and access for walking or biking to work or easy access for children to a relatively safe path should be a priority.”

The Penobscot Valley Community Greenprint

The Penobscot Valley’s landscape, recent growth pressures, and the interconnected nature of its communities have inspired The Trust for Public Land (TPL), the Bangor Land Trust (BLT), and the

Penobscot Valley Council of Governments (PVCOG) to spearhead a regional comprehensive open space visioning project called “Greenprinting.” The Greenprint began in 2007 when City of Bangor leaders affirmed the need for a new open space plan but recognized that no single municipality could address what has quickly become a more widespread issue:

Dispersed development patterns will take their own course unless a regional initiative can channel them appropriately.

With guidance from TPL, the Eastern Maine Development Corporation (EMDC), BLT, and PVCOG, the municipalities of Bangor, Bradley, Brewer, Eddington, Hampden, Hermon, Holden, Milford, Old Town, Orono, Orrington, and Veazie joined forces to create the Penobscot Valley Community Greenprint. To preserve both their landscape heritage and their economic future, these communities worked together (and will continue to do so) to address the question of land use on a regional scale.

A number of state- and local-level zoning reforms, Comprehensive Planning elements, economic strategies, and legislative actions direct development patterns and seek to preserve natural amenities within the region. (See **Appendix B** for a comprehensive list.) Two of the more recent state-level planning initiatives show a greater integration of land use, public-directed investment, and natural resources preservation, such as drinking water source protection.

CHARTING MAINE’S FUTURE

In October 2006, the Brookings Institution – a non-partisan, non-profit public policy research organization – produced a report, *Charting Maine’s Future: An Action Plan for Promoting Sustainable Prosperity and Quality of Place*, that called upon the state to take bold action and focus its limited resources on a few critical investments.² At the heart of this report was its conclusion that “as the search for quality places grows in importance, Maine possesses a globally known ‘brand’ built on images of livable communities, stunning scenery, and great recreational opportunities.” Since its release, the report has driven numerous state initiatives, ranging from educational consolidation to continued (Land for Maine’s Future began in 1998)

¹ Project staff interviewed more than two dozen individuals on a range of topics to provide context for this initiative. Their opinions are reflected here. See **Appendix A** for a list of interviewees.

² *Charting Maine’s Future: An Action Plan for Promoting Sustainable Prosperity and Quality of Place* (Washington, DC: Brookings Institution, 2006). All quotations in this section reference this report.

bond issues in support of the Land for Maine's Future program and targeted research and development funding.

Of particular relevance to the Greenprint, the report called attention to the rapid suburbanization of Maine and the resulting conversion of rural fields and woodlands into residential uses, higher public service costs due to greater population dispersion, barriers to development in traditional regional hubs combined with weak local and regional growth management, and an inconsistent stance toward economic development that has weakened the state's efforts to improve its economy. The report made a number of recommendations, some of which have been acted upon and many of which remain under discussion. Most important, however, the report emphasized Maine's brand, its quality of place based on its natural beauty and the historic character of its built places.

- **Building Codes**

The Brookings Institution report described the current building code situation as a "crazy quilt of code regimes" resulting in projects that cost more as each building and project is customized by developers to fit the specific needs of the municipality. The report also stated that "Maine's lack of a uniform statewide building code seriously hinders redevelopment by injecting uncertainty into investors' decision-making, consuming time, and making clear guidance from a central source impossible to obtain." As a result, the state has now adopted statewide building and energy codes that will go into effect in 2010. All communities with a population of over 2,000 will be required to enforce these codes.

- **Preservation and Economic Development**

As noted above and as called for in the Brookings Institution report, Maine's tax credit for the rehabilitation of historic structures has been expanded to support efforts to reuse historic structures located throughout the state, many of which are clustered in traditional downtowns and town centers. In addition, bond issues have been approved to fund the Land for Maine's Future program and targeted research-and-development efforts, supporting both preservation of open space



A covered bridge at historic Leonard's Mills in Bradley, by Asgeir J. Whitney.

and investments in economic development compatible with Maine's brand and quality of life. Finally, the report recommended that regional land use planning in Maine be strengthened. It is hoped that this regional open space planning effort will be a strong first step in that direction.

THE GOVERNOR'S COUNCIL ON MAINE'S QUALITY OF PLACE

As a follow-up to the Brookings Institution study, the Governor's Council on Quality of Place was established and released its second and final report in May 2008. It called for a coordinated state and local effort to use Maine's Quality of Place as the basis for an overall job creation and investment strategy. This built upon the council's first report, which put forward 15 recommendations on regional landscape protection and community and downtown revitalization. The governor has now issued an executive order setting the Maine Quality of Place investment strategy as well as a new State Quality of Place Council to help coordinate the efforts of state agencies, establish standards for regional Quality of Place investment plans, and monitor and report on these efforts.

These and various other efforts to implement the report's recommendations are continuing to inform the overall public policy debate in Maine and provide the context for this unprecedented regional open space planning effort.

The Penobscot Valley Community Greenprint Process

The Penobscot Valley Community Greenprint will achieve two critical community objectives.³ One is improving regional collaboration in recognition that natural features do not respect political boundaries. Many residents point out that if community leaders know more about what their neighbors are doing, they may find efficiencies and better build on existing regional projects. One person explained, “You are able to have something much larger as a whole than you could have as fragmented units. You get linkages and excitement from the possibilities that come from being part of a larger group. There’s more knowledge and impetus.”

A second objective is achieving a healthy balance between economic development and conservation. Some residents are dissatisfied with recent developments, notably “big box” growth and franchises; others commend this development because it brings jobs to the region. Some worry that most recent development is too generic and that if this type of development pervades the Penobscot Valley, its unique character will be overshadowed, reducing its desirability as a place to live and work.

Many local planning efforts, as well as statewide reports by the Governor’s Council on Quality of Place and the Brookings Institution, recommend a twofold approach: (1) concentrate development in existing downtowns and other carefully designated job centers/corridors, and (2) promote open spaces, working lands, and unique natural features that will attract tourists and new businesses. Using the Greenprint as a guide, the region can determine what to protect and where to develop, thus promoting economic development while preserving the region’s unique and appealing character.

GREENPRINT CONSTITUENCY

The Greenprint process started with building a local constituency to direct and inform the convening organizations.

- **The Penobscot Valley Community Greenprint Steering Committee**
Composed of one or two representatives from each of the 12 member communities and the four organizing groups, the Steering Committee guided the Greenprint process,

ensuring that it employed a comprehensive community engagement process while keeping in sync with individual community plans and priorities.

- **The Penobscot Valley Community Greenprint Stakeholder Group**
The Stakeholder Group included members of the Steering Committee as well as broad-based representation from economic, environmental, recreational, historical, and other community interests. This group refined potential goals identified through the data gathering phase, ranked goals in relationship to one another, provided quality control, and recommended strategic action steps for Greenprint implementation.

The committee and community stakeholders represented a cross-section of interests in the Penobscot Valley and included many people who are locally active or able to represent the views of a larger group.

DATA GATHERING AND ANALYSIS

Through interviews, public meetings, and surveys, residents articulated their preferences and priorities for conservation and use of open space. Then, hard data about the land base was married to these preferences and priorities. Using computer modeling and geographic information system (GIS) mapping technology that considered multiple factors (e.g., topography, trail networks, location of key waterways, and population trends), colorful maps were developed that clearly pinpoint community priorities. This information gathering stage involved:

- **One-on-one Interviews**
TPL project staff interviewed more than two-dozen individuals who offered a range of perspectives on the historical, political, economic, and other aspects of living and working in this region. (See **Appendix A** for a description of community interview and a list of interviewees.) Some of these findings have provided context in this report and were used to structure and prepare for the Greenprinting process.

³These objectives emerged during interviews, public listening sessions, and a community survey.

- **Current Conditions**

TPL conducted an in-depth analysis of the region's demographics, economics, transportation, and historic and natural resource features, focusing also on the distinct characteristics of each of the 12 member communities. (See **Appendix C** for full Current Conditions Report.)

- **Public Listening Sessions**

In two public listening sessions held in May at the Hampden Academy and Old Town High School, more than 100 people gathered to share ideas about the future of the region. (See **Appendix D** for public outreach strategies.) Participants discussed what they value about local landscapes and generated a list of land conservation goals for the region.

- **Public Opinion Survey**

Between May 21 and June 5, 2008, Critical Insights of Portland, Maine, conducted a survey of more than 600 voters⁴ across the Penobscot Valley to gauge residents' current level of satisfaction with living in their town, particularly as it related to land-use considerations; to identify which park and open space activities residents believe should be a top priority for their town; and to identify the current recreational activities respondents engage in and their participation rates in those activities. The survey found:

- **Satisfaction levels are high** – Residents of the 12 towns making up the Penobscot Valley study area reflect a high degree of satisfaction with their experience of living in their respective towns. Approximately 80 percent of the voters surveyed indicated that they are satisfied with their residential experience, and of these, fully 43 percent are “highly satisfied.”
- **Voters are actively involved in outdoor recreational activities** – Only about one in six residents indicated



*Enjoying the Stillwater River view in Orono,
by Jeff Kirlin.*

that they are not at all active in terms of recreational activity within the local area. Although activity tends to skew to slightly younger residents, a solid core of those 65 and older characterize their activity levels as frequent.

- **Demand varies** – There is not a strong level of demand associated with any activity that is currently inaccessible within 20 miles of home.
- **Trails are a high priority** – Walking is the recreational activity cited most frequently, but residents also cited a wide variety of other outdoor pursuits.
- **Land and water preservation and protection lead the list of purposes that would generate strong support** – In particular, residents are more likely to support initiatives that protect existing entities (such as working forests and farms)

⁴The sample is representative of the population distribution by community in the 12-town footprint. Only reported voters were sampled. Initial refusal rates were limited to just 3.9 percent overall, indicating that the sample was not tainted by any discernable nonresponse error. To assure quality data capture and professional interviewing, a portion of all interviews was verified with callbacks within 24 hours of the actual interview.

Greenprint Opportunity Maps

before they are likely to support new initiatives (such as building playgrounds and ball fields).

- **Eighty percent agree** – The chief rationale cited by eight in ten residents for supporting park and open space programs is reflective of the Maine mind-set:
 - Assuring public access to the land
 - Improving the quality of life of the community
 - Maintaining sensitivity to landowner rights

Goal-setting

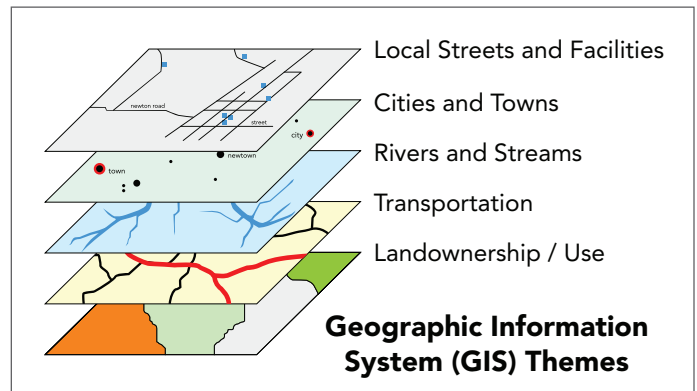
TPL staff worked with the Penobscot Valley Community Greenprint Stakeholders to group the goals identified in the public listening sessions into categories, cross-referencing participant priorities with findings from the randomly administered telephone survey. These goals and the sub-goals were then refined based on technical constraints and other considerations such as what could be mapped and what data were available:

- Protect habitat and unfragmented natural areas
- Maintain scenic values and protect scenic vistas
- Protect working landscapes
- Protect water quality
- Establish areas for public access and recreation
- Create multi-purpose trails

TPL developed individual maps for each of the six goals the Stakeholders drew from the community response. Each community can use these maps to determine where to prioritize land conservation and where to favor growth. TPL, with assistance from the Steering Committee and Stakeholder Group, as well as a Technical Advisory Team (TAT), reviewed the list of community-generated goals, conducted a data inventory, and compiled GIS layers to construct a GIS database model and land conservation opportunity maps, which all member communities will be able to access. PVCOG will maintain a web-based system on behalf of the municipalities involved.

The benefit of the Greenprint computer model is that the underlying data maps and layers are accessible and transparent, so that users and viewers can drill down underneath the images and identified areas to determine what goals or criteria are met by those lands. The conservation of these identified lands will ensure the biggest ‘bang for the buck’ for the region. The maps are color-coded based on the criteria weightings that identify where the Penobscot Valley communities can most efficiently and effectively direct their resources to meet the Greenprint goals. The most intense colors indicate the best opportunities:

- Dark Red = High Opportunity
- Dark Orange = Moderate – High Opportunity
- Orange = Moderate Opportunity



Graphic 1 depicts how GIS data layers are overlaid to build Greenprint models.

ESTABLISH AREAS FOR PUBLIC ACCESS AND RECREATION PRIORITIES

This map indicates areas that provide the best opportunity for improving recreational access in the Penobscot Valley communities. (See Map 1, p.14, Establish Areas for Public Access and Recreation.)

These types of lands were prioritized: accessible open space along the Penobscot River, park service gaps in areas of greatest need, natural areas within a walkable distance to urban centers, opportunities for wildlife observation and low impact recreation,⁵ community gardening opportunities,⁶ and remote spaces. (See Model Criteria in Appendix E for more detail on the data sources and GIS methodology for all six goals.)

The primary intent of this goal was to identify potential recreation areas that are within a walkable or bikeable distance from where people live. As one can see by looking at the map, most opportunities are near the urban areas, which are generally along the river. There is also a sizeable dark red area where Brewer, Holden, and Eddington meet. Large blocks of medium-priority (orange) appear in Hermon, Hampden and Holden, furthest from the river.

This map identifies more than 106,000 acres of the study area as potential priority recreation land. But almost 10 percent of those acres are already conserved. For the purposes of the Greenprint, “conserved” land is defined as: state, federal, and land trust holdings; municipal greenspaces; and the University of Maine’s preservation lands. Tribal Lands, the University of Maine Campus, and the Penjajawoc Marsh are not included in the “conserved” land calculations. Please see **Appendix C** Table C for a list of conserved land in each municipality.

About 96,000 acres are now priority opportunities for reaching this Greenprint goal, which represents 40 percent of the study area.

PROTECT HABITAT AND UNFRAGMENTED NATURAL AREAS PRIORITIES

This map illustrates in dark red lands that could be conserved in order to protect special natural habitats in the study area. (See Map 2, p.15, Protect Habitat and Unfragmented Natural Areas.) To accomplish this, the map suggests targeting natural lands that are large contiguous patches,⁷ areas with habitat diversity, rare and endangered species habitat, habitat connectivity corridors, aquatic wildlife habitat, terrestrial wildlife habitat, and undeveloped buffers surrounding natural land.

Almost 60 percent, or 140,700 of the 239,000 acres of unfragmented natural areas and habitat connectivity corridors in the study area have not yet been protected. The total land identified as high priority for habitat protection is quite a bit more land than appears on the Public Access and Recreation Priorities map described first, but it is important to note that some of the land conserved to benefit flora and fauna will also be appropriate for certain types of human recreation.

PROTECTING WORKING LANDSCAPES PRIORITIES

This map shows in dark red the areas that ought to be preserved as working lands. (See Map 3, p.16, Protect Working Landscapes.) Underpinning this goal is the desire of many to preserve a traditional economy and culture. In surveys, interviews, and public listening sessions, several people also mentioned the importance of local food production for environmental and health benefits. Some properties show up as high priority because they are existing farms and fields, others because they are working forests, and still others because their soils suit them to serve as potential farmland.

Almost 70,000 acres, not yet conserved, are identified as high priority (about 30 percent of the study area)

⁵ Determined by selecting areas within 1/8 mile of major wetlands, waterfowl and wading bird habitat that are also close to roads; also prioritized locations of moose crashes with vehicles that were on local or minor roads.

⁶ Determined as potential agricultural land (based on Soil Survey Geographic data) and bare ground that is located within one half mile of developed areas.

⁷ Determined as at least 150 acres in size in rural areas (and at least 50 acres in urban areas), that are not interrupted by paved roadways. Habitat types used to define “natural areas” include: Grassland/Herbaceous, Deciduous Forest, Evergreen Forest, Mixed Forest, Shrub/Scrub, Wetland Forest, Wetlands, Blueberry Field, Unconsolidated Shore, Recent Clearcut, Light Partial Cut, Heavy Partial Cut, Regenerating Forests, and Agriculture. Note: this model uses the same methodology used in the “Beginning with Habitat” Undeveloped Habitat Blocks model, but includes smaller blocks.

for this Greenprint goal. Much of this is comprised of large contiguous tracts in Milford, Bradley, and Old Town, but there appear to be good opportunities for farm and working woodlot preservation in each of the towns and cities in the study area.

CREATE TRAILS PRIORITIES

This map displays the results of the “Create Trails” analysis. (See Map 4, p.17, Create Trails.) The high priority areas in dark red on this map indicate potential connections to various types of destinations from the labeled trails already planned or existing.

The model uses the Penobscot River and the East Coast Greenway as the primary pathway. It identifies possible connections from those trails to parks and open space, river access points, town centers, and historic districts. Connection opportunities considered include (in priority order): existing trails and bridges, the priorities identified in the Orono Land Trust Open Space Corridor Plan, proposed trails and bridges, utility corridors (electric and telephone lines), railroads, stream corridors, undeveloped lands, and low traffic roads.

It is important to note that this analysis identifies a number of potential trail connection opportunities. It is not a trail plan.

Before taking into account land already conserved, the model identified almost 4,000 acres as high priority opportunity for meeting this Greenprint goal. However, about 1,000 of those acres have already been conserved, so only about one percent of the study area presents a high priority opportunity.

PROTECT WATER QUALITY PRIORITIES

On this map, areas in dark red represent the best opportunities for conserving land that will protect drinking water quality. (See Map 5, p.18, Protect Water Quality.) To accomplish this Greenprint goal, the map suggests targeting riparian buffers, wetlands, and shorelines for conservation. Aquifer recharge areas are also identified, as well as wellhead protection area buffers and headwater buffers. Some land in flood zones also appears as high priority for protection to meet water quality objectives.

Like the working landscape and unfragmented habitat goal maps, Bradley, Milford, and Old Town have large



Annual Kenduskeag Stream Canoe Race in Bangor; by Ásgeir J. Whitney.

tracts of high priority opportunity land. Hermon, Hamden, Holden, Orono, and Eddington also have ample opportunities to conserve land that will benefit water quality, more so than Bangor, Veazie, and Brewer. More than 20,000 acres identified as high priority for this Greenprint goal have already been conserved, but almost 60,000 remain as an opportunity. This leaves about 25 percent of the study area as high priority.

MAINTAIN SCENIC VALUES AND PROTECT SCENIC VISTAS PRIORITIES

This map identifies in dark red land as high priority for protection: specific hills, ridges and high points identified during the public listening sessions; scenic views from the Penobscot River; natural land cover along the Penobscot River; and scenic areas (open lands, farms and rivers) as viewed from high elevation points. (See Map 6, p.19, Maintain Scenic Values and Protect Scenic Vistas.) Some significant landmarks and historic places are also included. Roughly 40,000 acres of land not already conserved is identified as high priority opportunity for this Greenprint goal. It comprises 17 percent of the study area.

OVERALL REGIONAL PRIORITIES

The Stakeholder Group elected to create one map that highlights areas on the landscape where multiple goals can be accomplished. (See Map 7, p.20, Overall Regional Priorities.) On this map, the darker the red, the more individual community goals would be met by some level of conservation in that area. The computer model assigned “weights” at the direction of the Stakeholder Group in order to allow some goals described above to have more emphasis than others. The Steering Committee and Stakeholder Group decided to distinguish the urban areas from the

rural areas, applying a different combination of goal weightings to each (see Table A). For example, in the rural areas, emphasis is put on finding natural areas and working landscapes. In the urban areas, emphasis is put on finding areas where public access/recreation is appropriate and creating trails. The Stakeholders selected the weights for both the urban and rural areas, and the Steering Committee reviewed and approved them.

About 7,000 acres are identified as opportunity lands inside the urban growth areas (that are not already conserved). This represents slightly more than 20 percent of the urban study area. In contrast, 61,000 acres are identified in the rural areas, which represents about 30 percent of those areas.

Ample priority landscapes are identified in all 12 municipalities. There are many opportunity lands that

have not yet been conserved, as depicted in Table B both by total acreage and the percentage of land in the municipality that the acreage represents.

When considering the entire study area, about 75 percent of the land that is already conserved was identified by the model as high-priority. If the community decided to protect all of the remaining opportunity areas identified on the “overlap map” they would still need to protect nearly 70,000 acres, which is almost 30 percent of the study area. For most communities that is not a realistic goal, given the desire and need to balance conservation with growth. Accordingly, this is intended to be an opportunity map not a prescriptive map, indicating good places for land conservation that meets the region’s goals.

Table A. Regional Goal Priority Weights

Goal	Urban Weighting	Rural Weighting
Protect Habitat & Unfragmented Natural Areas	19%	28%
Maintain Scenic Values & Protect Scenic Vistas	2%	18%
Protect Working Landscapes	9%	26%
Protect Water Quality	18%	10%
Public Access & Recreation Areas	27%	14%
Create Trails	25%	15%

Table B. Percentage of High Priority Lands that are Overall Regional Priorities

	Non-Conserved High Priority Acres	Percentage of High Priority Acres
Study Area	68,111	
Bangor	5,416	24.2%
Bradley	12,291	37.8%
Brewer	2,824	28.3%
Eddington	4,282	25.2%
Hampden	7,665	30.7%
Hermon	6,608	28.2%
Holden	4,183	20.4%
Milford	10,056	34.3%
Old Town	7,738	28.3%
Orono	3,324	26.5%
Orrington	3,355	19.1%
Veazie	369	18.6%
Inside Urban Boundary	7,101	21.6%
Outside Urban Boundary	61,010	29.5%

THE PENOBSCOT VALLEY COMMUNITY GREENPRINT OPPORTUNITY MAPS

Milford

The following seven pages contain maps that provide visual analyses of The Penobscot Valley Community Greenprint Goals, which are described in detail beginning on page 9.



Penobscot Valley Community Greenprint

Establish Areas for Public Access and Recreation Priorities



Legend

Establish Areas for Public Access and Recreation Priorities

- High
- Moderate - High
- Moderate
- Parks and Conservation Land*

Transportation

- Interstate
- Principal arterial
- Major Road
- Minor Road
- Railroad

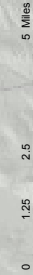
Water Features

- Waterbody
- River
- Major Wetlands

Township Boundary

County Boundary

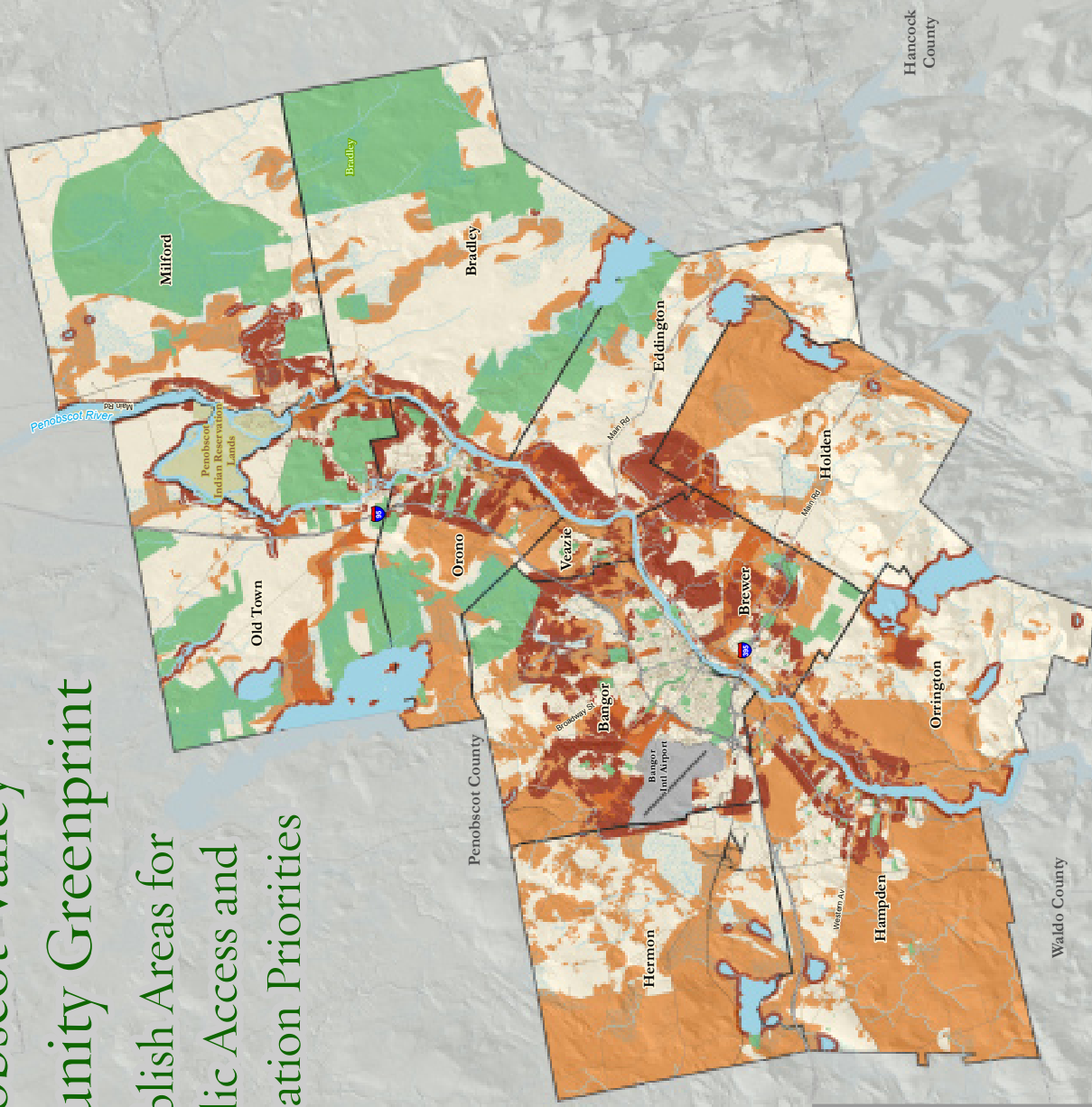
* Conservation Land includes areas managed by federal and state agencies, land trusts, municipal greenparks and the University of Maine preservation lands.



This map displays the results of the Establish Areas for Public Access and Recreation Priorities analysis, a conservation goal within the Penobscot Valley Community Greenprint. The degree of priority for each area is shown with a color scale with dark red representing high priority and orange representing moderate priority.

These priorities are the result of a weighted analysis on the following criteria:

Park Equity Analysis	23 %
Natural Areas Near Urban Areas	23 %
Accessible Open Space Along Waterfront	23 %
Community Garden Opportunities	12 %
Wildlife Observation and Low Impact Recreation	12 %
Remote Spaces	7 %



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Penobscot Valley Community Greenprint

Protect Habitat and Unfragmented Natural Areas Priorities



Legend

Protect Habitat and Unfragmented Natural Areas Priorities

- High
- Moderate - High
- Moderate
- Parks and Conservation Land*

Transportation

- Interstate
- Principal arterial
- Major Road
- Minor Road
- Railroad

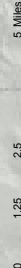
Water Features

- Waterbody
- River
- Major Wetlands

Boundaries

- Township Boundary
- County Boundary

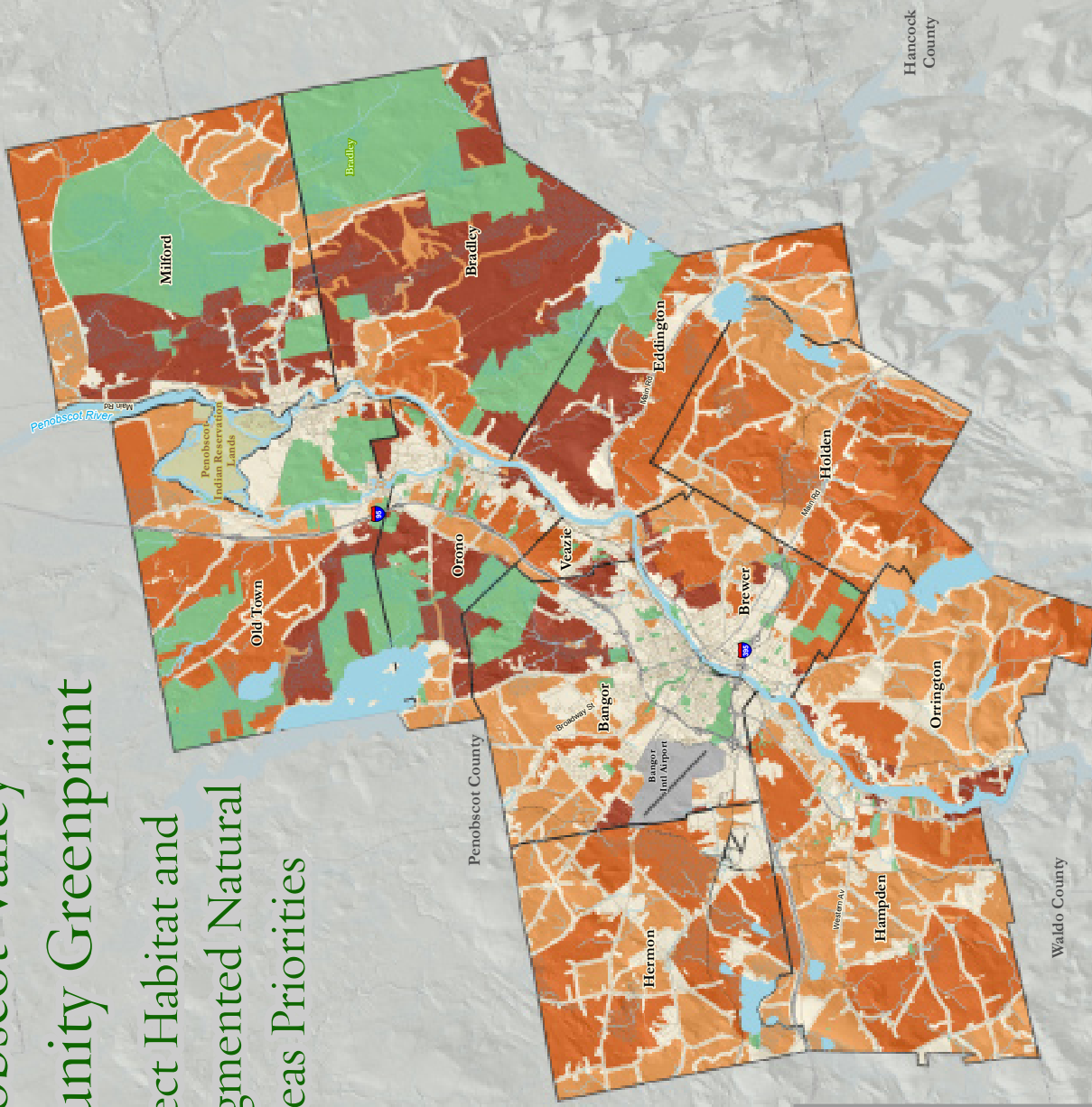
*Conservation Land includes areas managed by federal and state agencies, land trusts, municipal greenparks and the University of Maine preservation lands.



This map displays the results of the Protect Habitat and Unfragmented Natural Areas Priorities analysis, a conservation goal within the Penobscot Valley Community Greenprint. The degree of priority for each area is shown with a color scale with dark red representing high priority and orange representing moderate priority.

These priorities are the result of a weighted analysis on the following criteria:

Unfragmented Blocks of Natural Lands	24 %
Habitat Diversity	24 %
Rare and Endangered Species	16 %
Habitat Connectivity Corridors	16 %
Aquatic Wildlife Habitat	8 %
Terrestrial Wildlife Habitat	8 %
Undeveloped Buffers Surrounding Natural Lands	4 %



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Penobscot Valley Community Greenprint

Protect Working Landscapes Priorities



Legend

Protect Working Landscapes Priorities

- High
- Moderate
- Parks and Conservation Land*

Transportation

- Interstate
- Principal arterial
- Major Road
- Minor Road
- Railroad

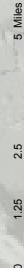
Water Features

- Waterbody
- River
- Major Wetlands

Boundaries

- Township Boundary
- County Boundary

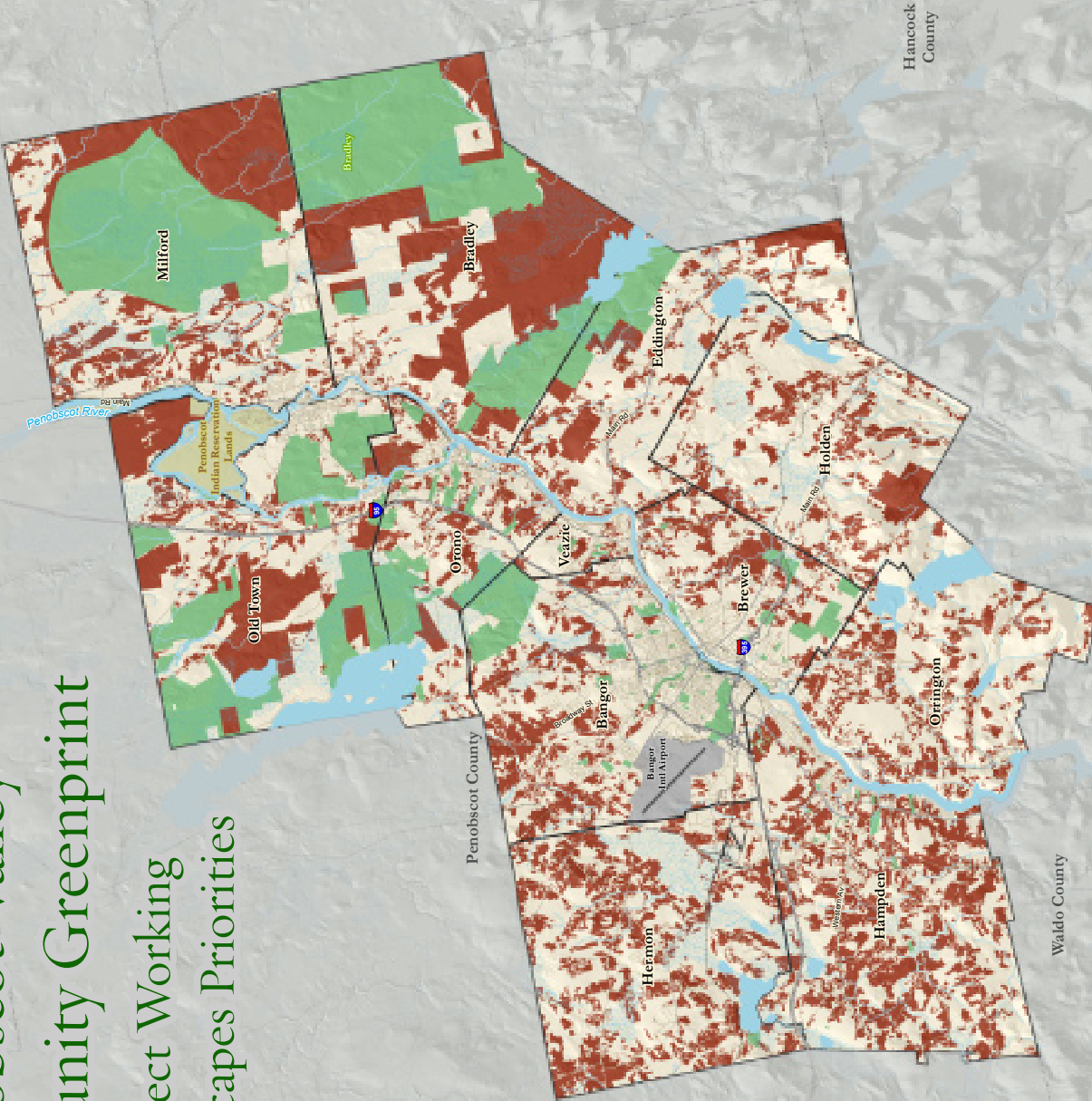
* Conservation Land includes areas managed by federal and state agencies, land trusts, municipal governments and the University of Maine's Forestlands Unit.



This map displays the results of the Protect Working Landscapes Priorities analysis, a conservation goal within the Penobscot Valley Community Greenprint. The degree of priority for each area is shown with a color scale with dark red representing high priority and orange representing moderate priority.

These priorities are the result of a weighted analysis on the following criteria:

Farms and Fields	33 %
Potential Farmland	33 %
Working Forests	33 %



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Penobscot Valley Community Greenprint

Create Trails



Legend

Create Trails
 Selected Path

Opportunities
 East Coast Greenway
 Existing Trail
 Proposed Trail

Destinations
 Town Center
 River Access
 Parks and Conservation Land*

Transportation
 Interstate
 Principal arterial
 Major Road
 Minor Road
 Railroad

Water Features
 Waterbody
 River
 Major Wetlands

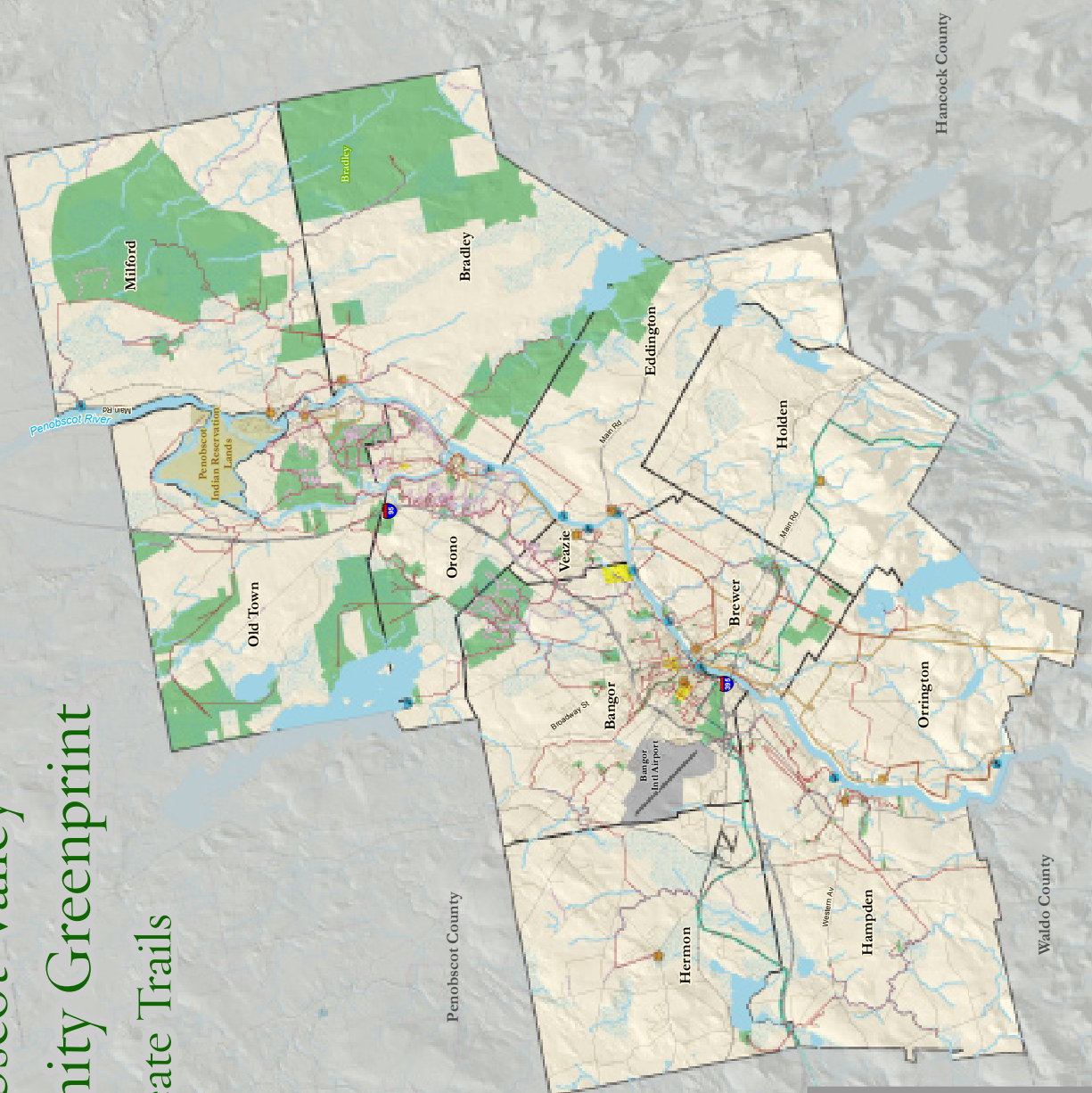
Township Boundary



This map displays the results of the Create Trails analysis, a conservation goal within the Penobscot Valley Community Greenprint. Using the Penobscot River and the East Coast Greenway as the primary pathway, this model identifies possible connections to parks and open space, river access points, town centers and historic districts.

Connection opportunities considered include in priority order:

- Existing Trails and Bridges
- Orono Land Trust Open Space Corridor plan
- Proposed trails and bridges
- Utility corridors - electric and telephone lines
- Railroads
- Stream corridors
- Undeveloped lands
- Low traffic roads



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Penobscot Valley Community Greenprint

Protect Water Quality Priorities



Legend

Protect Water Quality Priorities

- High
- Moderate - High
- Moderate
- Parks and Conservation Land*

Transportation

- Interstate
- Principal arterial
- Major Road
- Minor Road
- Railroad

Water Features

- Waterbody
- River
- Major Wetlands

Other Features

- Township Boundary
- County Boundary

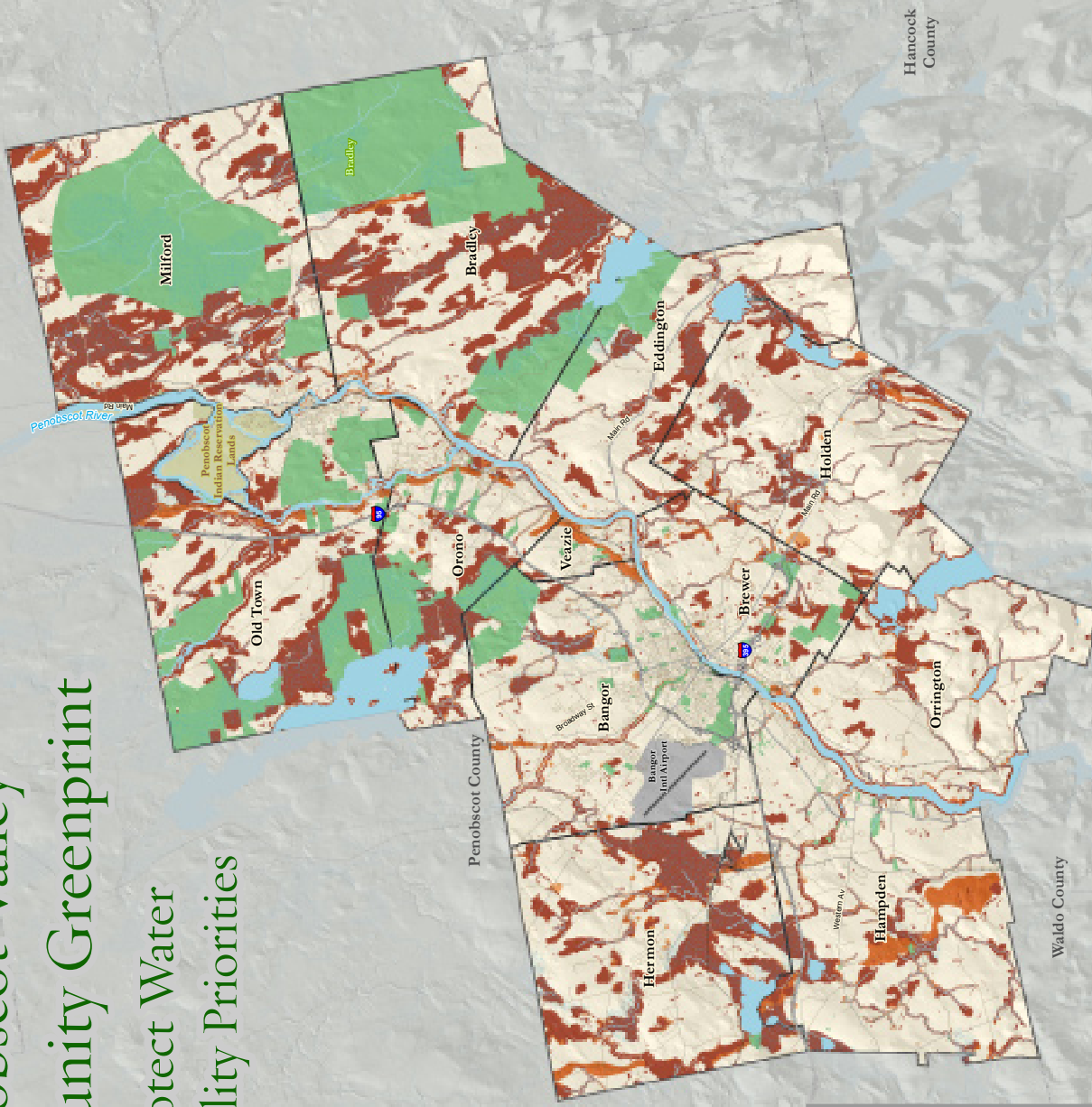
* Conservation Land includes areas managed by federal and state agencies, land trusts, municipal governments and the University of Maine preservation lands.



This map displays the results of the Protect Water Quality Priorities analysis, a conservation goal within the Penobscot Valley Community Greenprint. The degree of priority for each area is shown with a color scale with dark red representing high priority and orange representing moderate priority.

These priorities are the result of a weighted analysis on the following criteria:

Riparian Buffers, Wetlands and Shorelines	30 %
Groundwater	25 %
Headwaters	20 %
Wellhead Protection Areas	20 %
Flood Zones	5 %



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Penobscot Valley Community Greenprint

Maintain Scenic Values and Protect Scenic Vistas Priorities



Legend

Maintain Scenic Values and Protect Scenic Vistas Priorities

- High
- Moderate - High
- Moderate
- Parks and Conservation Land*

Transportation

- Interstate
- Principal arterial
- Major Road
- Minor Road
- Railroad

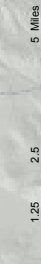
Water Features

- Waterbody
- River
- Major Wetlands

Other Features

- Township Boundary
- County Boundary

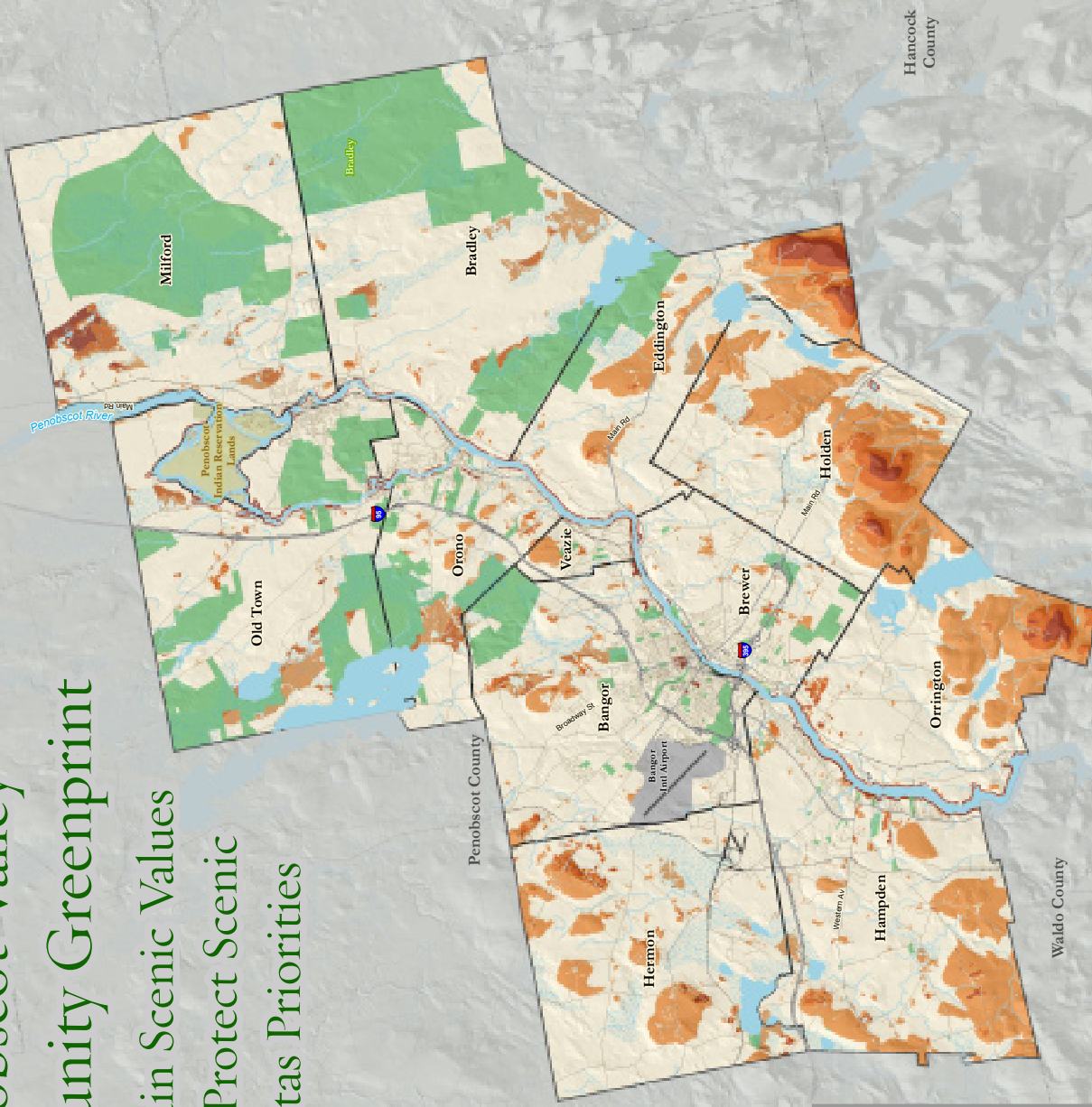
*Conservation Land includes areas managed by federal and state agencies, land trusts, municipal governments and the University of Maine preservation lands.



This map displays the results of the Maintain Scenic Values and Protect Scenic Vistas Priorities analysis, a conservation goal within the Penobscot Valley Community Greenprint. The degree of priority for each area is shown with a color scale with dark red representing high priority and orange representing moderate priority.

These priorities are the result of a weighted analysis on the following criteria:

Scenic Landscapes - Open Lands, Farms, and Rivers	22 %
Hills, Ridges, and High Points	22 %
Views from the Penobscot River	22 %
Penobscot River Corridor	22 %
Historic Places	6 %
Views of Significant Landmarks	6 %



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Penobscot Valley Community Greenprint Overall Regional Priorities



Legend

Overall Regional Priorities

- High
- Moderate - High
- Moderate
- Parks and Conservation Land*

Transportation

- Interstate
- Principal arterial
- Major Road
- Minor Road
- Railroad

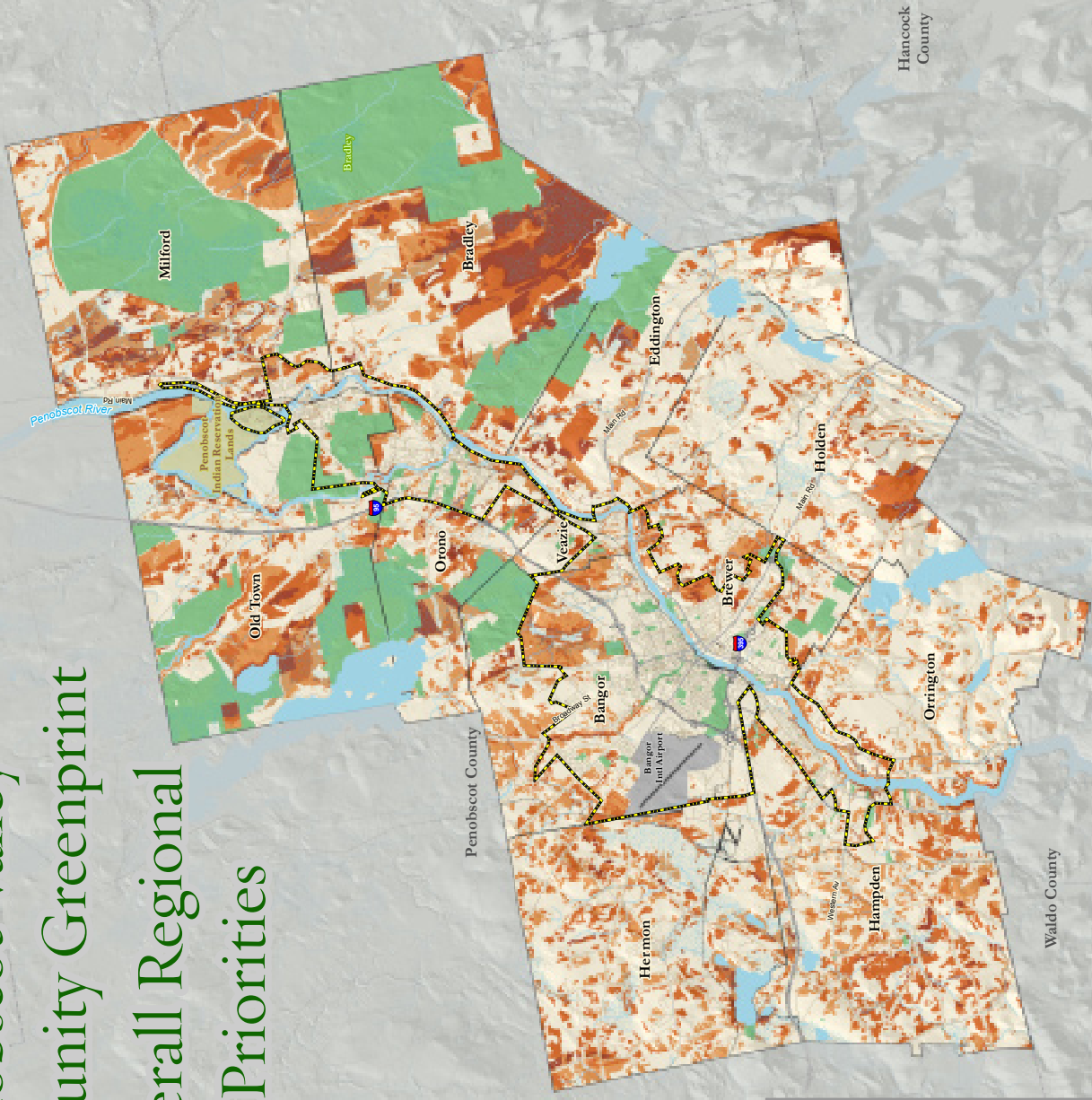
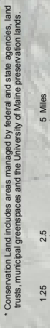
Water Features

- Waterbody
- River
- Major Wetlands

Boundaries

- Urban Boundary
- Township Boundary
- County Boundary

* Conservation Land includes areas managed by federal and state agencies, land trusts, municipal greenprints and the University of Maine preservation lands.



This map displays the Overall Regional Priorities results for the Penobscot Valley Community Greenprint. These results reflect priorities for urban and rural areas by assigning unique relative weights to urban priorities inside the Urban Boundary and rural priorities outside the Urban Boundary. The degree of priority for each area is shown with a color scale with dark red representing high priority and orange representing moderate priority.

These priorities are the result of a weighted analysis on the following criteria:

	Urban	Rural
Protect Habitat and Unfragmented Natural Areas	19 %	28 %
Maintain Scenic Values and Protect Scenic Vistas	2 %	18 %
Protect Working Landscapes	9 %	26 %
Protect Water Quality	18 %	10 %
Establish Areas for Public Access and Recreation	27 %	14 %
Create Trails	25 %	15 %

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Implementation Strategies

In reading these maps, it is important to note that they show areas of opportunity to protect lands through a variety of conservation tools that meet the goals of the Penobscot Valley Community Greenprint. These maps do not make any suggestions or statements about land-use changes and should not be construed as having any impact on land values. The model and resulting maps provide a guide for how to effectively and efficiently allocate human and financial resources to meet the goals of the region. The maps also offer utility for:

- Identifying future areas for greening when redevelopment occurs
- Directing growth toward less environmentally sensitive areas by transferring development densities away from lands needed for recreational connectivity and resource preservation
- Siting required green space and water quality features in areas identified as important to meet the Greenprint goals
- Planning for new recreation facilities to meet population needs near new or planned development
- Targeting areas for beautification to enhance business retention and recruitment

LAND CONSERVATION

Land conservation is both the notion of protecting a piece of the earth for certain purposes and the set of real estate, legal, and financial tools designed to make that notion a tangible reality.

Regulations, incentive policies, and land conservation are each important and often complementary. However, land conservation differs from regulations or incentives, which are subject to frequent changes based on politics, policy, and the science of the day. As a general rule, land conservation has broader support because it is achieved through the mutual agreement of willing landowners and willing buyers of land or easements and has perpetual benefits to the public. Often, a fair price for value foregone is a critical element to successful land conservation, and sources of funding to provide such compensation are a necessary condition for success.

Land conservation provides many opportunities for considering community needs and desires because it can be applied to natural resources, parks, habitat, forests, farmland, and more. It can be said of the Penobscot Valley that there is so much important land that one would have difficulty finding an undeveloped parcel that is not worthy of conservation. Indeed, this assertion is very nearly borne out because of the rich resources found here, but neither the money nor the will exists to protect every parcel and it is clear that many unprotected parcels will be developed soon. Thus, a primary goal of this process is to facilitate an acceleration of both the pace and the quality of land conservation in the Penobscot Valley by bringing many voices to conservation, employing the best technology available, and taking steps to assure that implementation is both efficient and effective.

The practice of effective land conservation requires the employment of a variety of both public and private tools to protect land for public enjoyment. The common thread woven among these conservation tools, listed below, is the value of conserving the lands most important to the recreational, environmental and economic needs of the Penobscot Valley:

- Fee Simple Land Acquisition
- Donated or Purchased Conservation/Preservation Easements
- Purchase or Donation of Development Rights
- Land or Improvements Value Donations
- Developer Incentives

CONSERVATION ACTIONS

Land conservation is one of the key, but not the only, tool in the box for preserving important landscapes and water resources while sustaining and improving economic vitality. Stakeholders have identified a number of other action items to implement the Greenprint goals. Each action item is explored in greater detail in this section. The descriptions beneath each action plan goal include specific strategies suggested by Stakeholders that could be taken to realize the goal.

ACTION ITEM 1. PURSUE LAND CONSERVATION IMPLEMENTATION STRATEGIES THAT WILL UTILIZE GREENPRINT MAPS

1. Determine custodial duty. Establish an entity to take charge of the Greenprint maps and this action plan. It may be PVCOG, an independent entity, or even the land trust(s).
 - a. Member committees to consider continuing funding for implementation to cover or offset costs of custodian and ensure that a regional group continues to convene.
2. Update maps on a regular basis.
3. Use Greenprint as a tool for all land agencies (e.g. planning boards, comprehensive plan committees, etc.).
 - a. For example, coordinate adoption of subdivision ordinances with 50 percent open space requirements. From that, begin to use Greenprint to determine which 50 percent of the subdivision should be set aside on case by case basis as part of subdivision process.
4. Create private landowner incentives.
 - a. Utilize incentive zoning based on the composite Greenprint map. For example, allow increased density of development in non high-priority areas in exchange for community improvements to undeveloped high-priority areas in order to support compact, low-impact development.
5. Identify high-priority properties that may be conserved through public-private partnerships.
 - a. Pursue partnerships between governmental and institutional landowners for conservation of lands and development of improvements



Outdoor recreation along a bike path in the Penobscot Valley, by Jeff Kirlin.

- i. Identify the key partners
 1. Schools/Universities (joint-use agreements)
 2. Churches (joint-use agreements)
 3. Corporate Headquarters
 4. Hospitals
 5. Others?
 - ii. Identify key messengers and messages to convey
 - iii. Determine mechanism for governance, maintenance and operations
6. Pursue land conservation funding. Identify appropriate public finance mechanisms to raise local dollars to leverage county, state, and federal resources for land acquisition, conservation, greenway and trail development, and park improvements.
- a. The Penobscot Valley municipalities could issue general obligation bonds.
 - b. Municipalities could create tax increment financing (TIF) districts.
 - c. Seek grants from state, federal, and private partners.

ACTION ITEM 2. INTEGRATE REGIONAL COORDINATION AND PLANNING. BRING COMMUNITIES TOGETHER FOR PROBLEM SOLVING AROUND ECONOMIC, TRANSIT, DEMOGRAPHIC AND ENVIRONMENTAL ISSUES.

1. Strengthen the Penobscot Valley Council of Governments or develop a regional planning commission that will convene the coalition of towns/cities.

- a. Must have a regional entity adept at this type of work to discuss areas available for development and coordinate specific projects with abutting communities, among other things.
 - b. A regional planning coalition may proceed by:
 - i. Elected officials and town managers/ administrators from each local government attend an informational meeting with a facilitator/ consultant and vote on a resolution to continue as part of the group (“regional planning coalition”) with description of time commitment, such as quarterly meetings.
 - c. Regional planning coalition membership could consist of one to two people from each member town.
 - i. Members could be the elected officials, town managers, citizen advisors and/or delegates currently involved in this project
 - ii. Important that municipal managers and local elected officials are involved in some way.
 - iii. Planning board representation is paramount.
 - d. Regional planning coalition mission could be to achieve better working relationships among individual communities and better integration of planning.
2. Regional coordinating entity would prioritize, and possibly add to, the following list of tasks. They may consider prioritizing those that require little to no funding or tax dollars.
- a. Generating media pieces in print and video to foster dialogue. Enlist elected state legislators to encourage this idea.
 - b. Work on zoning/planning
 - i. Review and revise comprehensive plans.
 - ii. Cooperate regionally to determine best location for various land-uses.
 - iii. Enter into a regional agreement to do joint planning for where things go: retail, residential, industry.
 - iv. Consider a new zoning model that will attract businesses. One stakeholder commented: “Sprawled out industrial parks and cookie-cutter residential subdivisions are not attracting new business. The future in rural Maine is small businesses. Proximity to conserved land, trails, parks and natural resources are a huge draw. They also want vibrant, hip town centers.”
 - c. Subdivision ordinances should seek to require a percentage of open space.
 - i. It may be more appropriate to encourage open space (as opposed to require it) depending on whether there is a distinction between minor and major subdivisions, the location of the development, or other factors.
 - ii. See, e.g., Holden’s subdivision ordinance or Hampden’s subdivision ordinance for rural areas.
 - d. Restrict further lake, river and shore development. Identify river corridor shorelines that should remain undeveloped.
 - e. Tax incentives for cluster housing.
 - f. Cooperate on Dark Sky lighting ordinances.
 - g. Form stormwater management districts.
 - h. Compensate towns that give up tax base in order to meet vision.
 - i. Discuss whether there should be landfill expansion for out-of-state waste.
 - j. Develop community forests as a means toward preserving rural communities.
 - k. Create more town land trusts.
 - l. Create formal relationships between land trusts and municipalities.
 - i. This will require breaking down misconceptions and being attuned to financial realities.

ACTION ITEM 3. FOSTER BETTER COOPERATION BETWEEN ALL USERS (TRADITIONAL/NON-TRADITIONAL, HIGH/LOW IMPACT, MOTORIZED/NON-MOTORIZED, CURRENT/DESIRED USE, PUBLIC/PRIVATE LANDOWNER) TO HELP ADDRESS CONFLICTS. ALSO, IMPART RESPONSIBLE STEWARDSHIP TO PEOPLE OF ALL AGES.

Note: The Stakeholders recognized that these conflicts are real and growing in a Maine landscape that has changed hands with greater rapidity than at any time in the history of the state. They wrestled with how to resolve this question of conflicting uses. It was explicitly recognized that everyone has some claim on the landscape: it is a common resource. The struggle, as always, is in deciding where non-compatible uses can best be pursued. The Stakeholders concluded that the key to solving these problems is to maintain an open, inclusive and ongoing conversation among the many users of the land, and to recognize that compromise will be necessary on all sides.

1. Foster more communication and involvement of Sportsman Alliance of Maine (SAM), Maine Snowmobile Association, local snowmobilers clubs, ATV groups, hikers, water/fishing groups, historical societies, campers, landowners, and farmers in the Penobscot Valley Community Greenprint.
 - a. Create list of possible uses and organizations that provide these uses.
 - b. Broadly advertise festivals and events to reach all types of recreational users. E.g. The Penobscot “River Fest.”
2. Hold a well-publicized town(s)-wide meeting on trails and open space policies to help address user conflicts. Have maps prepared for permitted uses, landowner contacts, etc.
 - a. Include education about existing state law protecting landowners from liability. There may currently be unwarranted fears.
3. Involve children in open space activities and outdoor education; in promoting outdoor space on scale appropriate to region.
 - a. Scouts and 4-H could assist.
 - b. Educators could be involved: explore potential tie-in to school science programs.
4. Create incentives for allowing appropriate public access on private lands, and consider ways to reduce liabilities for private landowners.

- a. Analyze existing state law regarding landowner liability to see if modification is warranted.
5. Develop a regional landowner relations committee, modeled after the State of Maine, to provide a liaison between user groups and landowners.
 - a. This ensures any landowner that is, or wants to be, involved in a trail program knows there is a concerted effort to protect their lands. Tasks could also include providing public education/communication related to sustainability.
 - b. This could be structured so there is one for each municipality and/or one for the region. If regional, this could be a county government entity, a regional planning commission, or the regional planning coalition described above. It may be a possible role for PVCOG.

ACTION ITEM 4. INCREASE THE NUMBER OF MAPS AND MARKERS FOR EXISTING TRAILS.

1. Eastern Maine Development Corporation (EMDC) to develop a map that includes all existing trails by
 - a. Surveying each town and cataloging the trails in the study area and how they are used.
 - b. Overlaying the cataloged trails on a map of the region. This could later be used to identify ways the trails may connect.
 - c. Producing comprehensive regional recreational maps that are easy to read and easy to access online and in print.
2. Increasing maps and trail markers could involve municipal planning departments, municipal parks and recreation departments, conservation commissions, land trusts, other NGOs with interest (e.g. Bangor Trails, Maine Outdoor Adventure Club, Audubon, Maine Bike Coalition, snowmobile clubs, Boy Scouts, ATV clubs), regional tourism board, the Maine Department Transportation (bicycle trail coordinator), and Maine Fish and Wildlife.
3. Procure funding:
 - a. Consult with EMDC-Bangor Area Comprehensive Transportation System for

information on federal funding for trail systems

- b. Lobby Maine legislature and/or Maine DOT to increase state spending on development and maintenance of local trails.
 - c. Raise dollars through public-private partnerships and grants.
 - d. Encourage town funding for trail development.
4. Land trusts and municipalities could acquire rights of way. Scouts, conservation groups, high school students, and Student Conservation Corps could assist with clearing and trail marking. Local control of these projects can be most effective.
5. When the Penobscot River Restoration Trust transitions into becoming river steward as anticipated, trail work along the river could be within their purview.

ACTION ITEM 5. PERMIT SITE-APPROPRIATE RIVER DEVELOPMENT THAT WILL CONTRIBUTE TO PUBLIC APPRECIATION OF THE RIVER.

- 1. Agree on consistent rules along the entire river.
- 2. Develop a model river zoning ordinance.
 - a. This could be led by the existing River Group within PVCOCG that consists of all municipalities with the river connection. It should include all municipalities with river frontage.
 - b. It may be useful to involve the existing river groups and consult with the state agencies that have expertise and authority on these topics.
 - c. Potential model zoning ordinance content:
 - i. Define site-appropriate river development
 - ii. Identify high-priority areas along river for conservation/open space and high priority areas for development.
 - iii. Include language that requires evaluation of the economic benefit with the aesthetic/recreational value over a long term basis when considering development of



Kenduskeag Trail, by Joni Dunn.

- river frontage.
 - iv. Encourage water dependent or water related business development along the river (e.g. utilizes the view or actual use of the water). Tax incentives may be a tool for this.
 - v. Consider maximizing public use, and create a narrow definition for allowable development. For example, permit improvements to be made such as launch sites and picnic areas.
 - vi. Allow river development that protects the river and allows for tax base growth.
 - vii. Develop special requirements for the permit process to make sure that soils, wetlands, etc. are considered.
- d. Review with state and ensure consistency with state rules regarding shoreland zoning, as individual towns are authorized to make their rules more stringent than the state model but never less stringent than the state model.
- e. Municipalities with jurisdiction over land along the river would each adopt the model ordinance.

3. Improve code enforcement of development that is going in along river.
4. Towns and city planning boards (with help from citizenry) to review their town ordinances and comprehensive plans to make sure they reflect the need to permit site-appropriate river development that will contribute to public appreciation of the river.
 - a. Each town along the river to adopt Maine Department of Environmental Protection Best Management Practices for shoreline stabilization and buffers. (These riverbank stabilization methods improve slope stability, filter stormwater runoff, promote safer access, cool river water, and provide river-side “parks,” with large shade trees and opportunities for picnic, relaxing, walking, etc.
5. Towns, planning boards, and other organizations (EMDC) to evaluate possibility of developing tax increment financing for improvements/ redevelopment along waterfront.
6. Develop an ecotourism plan for the area with education. For example, the Penobscot River could be a gateway for outdoor adventures, including regional history education on tours.
7. Encourage the federal government to expand the Federal Wild and Scenic Rivers program to include historic rivers. If the program recognized the Penobscot River, it would enhance public perception and interest. The New England Governor’s Conference could work on this.

ACTION ITEM 6. ENHANCE LOCAL FARMING/FOOD PRODUCTION INCENTIVES.

1. Regional partner group to seek education on the current market challenges for farming in Maine.
 - a. University of Maine students in Sustainable Agriculture Program, under supervision from Chris Cronan, to gather data about existing extent and finances of working farms, including determining how they are currently assessed.
 - b. Municipal tax assessors to assist in financial assessments.
2. Propose a uniform assessment method for all the communities.

3. Structure incentive program. It is necessary to determine the type of incentive. For example, tax credits (instead of deductions) for production on working commercial farms. Determining the details of the incentive program could be accomplished by:
 - a. Municipal representatives working with the Maine Department of Agriculture and Cooperative Extension to ascertain needs of the farming community.
 - b. Engaging key players (i.e. current farmers, new farmers, co-ops, organic farmers, developers, etc) in frank discussion and analysis of needs – acreage, access, etc., and discussion of competing interests.
 - c. Municipalities to establish a database of family/working farms and determine what current property taxes are on that farmland.
 - d. Municipalities to review valuations placed on land and decide with farmers what is realistic. (Note: in many areas land is valued at a “residential rate” with no appeal process for land used as farmland, which does not give as high a return).
 - e. Tax assessors to keep this database updated on a municipal level.
4. Provide recommendations to the state farm bureau. Lobby the state legislature to pass a state law codifying these tax incentives.
5. Local town planning boards and land trusts to facilitate conservation of working farms.
 - a. Expand land trust work with agricultural landowners.
 - b. Land trusts to help educate town officials and residents on Maine Farmland Trust program.
6. Consider opportunities for more partnerships between educators and farmers (e.g. teaching labs for animal husbandry, alternative crop production, etc.). Utilize the Cooperative Extension Service in these discussions of collaborative opportunities.
7. Support/expand local farmers markets and promote the “eat local” movement.

Funding

An overarching theme to achieve broad implementation of the Greenprint or any plan is sufficient financial resources. A number of potential public funding options can be knit together into a “funding quilt” to create park and recreation opportunities in the Penobscot Valley. A funding quilt is the combination of funding sources—state, local, federal, and private—that are brought together to help achieve park and recreation objectives. **Appendix F** contains a compendium of the information and analyses used to develop this synopsis of finance opportunities, including:

- A description of the Penobscot Valley’s fiscal background
- A detailed analysis of the possible alternatives for funding a parks and recreation land acquisition and management program, including legal authority and revenue-raising capacity
- A summary of relevant federal and state funding programs that may be leveraged by the Penobscot Valley municipalities
- Pertinent election information, such as voter turnout history and voter reaction to Land for Maine’s Future measures, because most revenue options require approval by voters and/or landowners

LOCAL FUNDING OPTIONS

The most reliable form of funding to achieve park and recreation objectives over the long term is local funding. Owing to the competition for state, federal, and private funding, these sources must be viewed as supplements or incentives but not as the central funding source for a program.

Nationwide, a range of local public financing options have been utilized to fund parks and recreation. These include the property tax, the local sales tax, general obligation bonds, and less frequently used mechanisms such as special assessment districts, the real estate transfer tax, impact fees, and income taxes. The Penobscot Valley communities have several funding options that, if implemented, would generate revenues for parks and open space:

- **Issuance of general obligation bonds by the Penobscot Valley municipalities.**

At a cost to the typical homeowner of an average

of \$30 per year over the 20-year life of the bond, the Penobscot Valley municipalities could issue \$15.3 million in general obligation bonds.⁸ Using the same assumptions, four cities and towns could issue bonds in excess of \$1 million: Bangor (\$6.34 million), Brewer (\$1.76 million), Old Town (\$1.45 million), and Hampden (\$1.19 million). The remaining cities and towns could issue amounts between \$180,000 (Bradley) and \$845,000 (Orono). While bonding capacity in these cities and towns is more modest, purchasing easements and leveraging bonded monies could stretch this money much further.

- **Creation of impact fees by the Penobscot Valley municipalities.**

At a cost of \$150 per new resident, the Penobscot Valley municipalities could raise approximately \$98,600 each year in impact fees for open space, assuming all new housing in the region results in population growth. Based on growth projections from the U.S. Census Bureau, it is unlikely that all municipalities in the region will experience population growth; therefore, this report likely overestimates the total regional revenues generated by impact fees.

- **Creation of tax increment financing (TIF) districts.**

Bangor created a TIF district for new commercial development near the Penjajawoc Marsh and Stream. The TIF is expected to generate revenues in the range of \$1 million over the next 15 to 20 years. These funds, combined with leveraged funding from non-municipal sources, will be used to purchase property or conservation easements, public access projects, and water quality improvement efforts. This report does not evaluate the revenue-raising capacity of other potential TIF districts.

- **Seek grant funds from state, federal, and private partners.**

PRIVATE FUNDING

Private funds from foundations, nonprofit land trusts, corporations, and individuals are often used to complement local funding for the creation of park and recreation opportunities. Land trusts in

⁸ All numbers are rounded to three significant digits unless otherwise specified.

particular have been very active in the Penobscot Valley communities. This section reviews the missions and accomplishments of land trusts in the region. Although not discussed in detail, there are likely to be foundation, corporate, and individual donor opportunities as well.

The cumulative total of land protected by Maine's 85 private local and regional land trusts is 1.72 million acres protected by direct actions (i.e., land acquisitions, conservation easements, transferred purchase options, and management agreements). Maine's land trusts own 84,300 acres, hold conservation easements on 1.49 million acres, and directly helped protect another 141,000 acres by other means. There are four local and ten state and national land trusts operating in the Penobscot Valley.⁹

Bangor Land Trust¹⁰

The Bangor Land Trust was founded in 2001. Its mission is to “[p]rotect in perpetuity for public benefit significant lands and waters and their natural, agricultural, scenic, and traditional values and characteristics; [p]romote general and scientific understanding of the region's natural resources and the need for their preservation; and [c]ollaborate with organizations having related missions.” The Bangor Land Trust has protected several significant lands, including: South Penjajawoc Overlook, West Penjajawoc Grasslands, Walden-Parke Preserve, Levant Wetlands project, and Northeast Penjajawoc Preserve.

Brewer Land Trust¹¹

The Brewer Land Trust was founded in 2006. The Brewer Land Trust's mission is “[t]o cooperatively protect and preserve the natural and scenic resources of the City of Brewer and State of Maine, to encourage open space and green areas, to increase public awareness and understanding of the importance in conservation of natural resources and the interrelationships that exist among them, and to foster a trail system connecting to public areas and regional trails with all of the above for the enjoyment and benefit of present and future generations.” The Brewer

Land Trust owns one parcel of 4.2 acres and has 7.66 acres under a conservation easement.

Holden Land Trust¹²

The mission of the Holden Land Trust is to identify and conserve wildlife habitats, agricultural and forested areas, and natural areas that are an integral part of the area's traditional rural character for the benefit and enjoyment of current and future generations.

Orono Land Trust¹³

The Orono Land Trust (OLT) was incorporated in 1986 with the mission of preserving Orono's trail system for public use and integrating it into any plans for town development. Recently, OLT welcomed the Veazie Land Association as an affiliate dedicated to preserving conservation lands in the Town of Veazie. OLT has procured conservation easements for more than 300 acres, and has acquired more than 175 acres in fee simple, including the Cota Trail property, Hsu Preserve, Marsh Island Preserve, Newman Hill Preserve, Penobscot Shores, Pushaw Inlet Property, and Pushaw View Property. OLT has assisted with several other transactions, and report stewarding more than 1300 acres.¹⁴

Other Land Trusts Operating in Penobscot County¹⁵

According to the Maine Land Trust Network, the following ten state and national land trusts are operating in Penobscot County: Forest Society of Maine, Landmark Heritage Trust, Maine Audubon, Maine Coast Heritage Trust, Maine Farmland Trust, New England Forestry Foundation, Inc., Northeast Wilderness Trust, Small Woodland Owners Association of Maine, The Nature Conservancy, and The Trust for Public Land.

⁹ Land Trust Alliance, http://www.lta.org/census/census_tables.htm.

¹⁰ Bangor Land Trust, <http://www.bangorlandtrust.org>.

¹¹ Brewer Land Trust, http://www.brewerme.org/land-trust/brewer_land_trust.htm.

¹² Maine Land Trust Network, <http://www.mln.org/>.

¹³ Orono Land Trust, <http://www.oronolandtrust.org/>.

¹⁴ Orono Land Trust, “Orono Land Trust Properties,” <http://www.oronolandtrust.org/properties.htm>.

¹⁵ Maine Land Trust Network, <http://www.mln.org/>.

Conclusion

Maine is changing, as is the Penobscot Valley. While the traditional close ties between residents and our environment remain strong, they are showing signs of strain. Population growth today is centered outside our regional hubs, leading to increasing suburbanization, the loss of rural fields and forests, and increasing costs of providing government services. Traditional uses of private land for public recreation are threatened as landownership patterns change and more private land is posted. Unlike some areas in Southern Maine, however, these changes have not yet dramatically restricted the ability of our residents to take advantage of accessible and varied open spaces—ranging from urban parks to undeveloped natural areas.

As the Penobscot Valley continues to grow and develop, it must plan for the future to ensure that those things that make the area unique—be they the historic character of its town centers, the continuing sense of safety and community, or access to natural places—remain available both to present and to future generations.

The Penobscot Valley is a special place. Working together, its citizens can take the steps necessary to preserve that which is special and to capitalize on the Penobscot Valley's Quality of Place to ensure a bright economic future.



The setting moon along Stillwater River in Old Town, by Ásgeir J. Whitney.

Appendix A

Community Interviews

The Trust for Public Land project leads Jim Gooch and Kelley Hart interviewed the following 30 people between March 19 and March 21, 2008. These individuals were selected by members of the Penobscot Valley Community Greenprint Steering Committee as representatives who could provide a range of perspectives on the historical, political, economic, and other aspects of living and working in this region. Jim and Kelley used information gleaned from these interviews to help design and conduct subsequent portions of the Greenprinting process, and many of the interviewees' ideas have been incorporated into this report to help characterize regional opportunities and constraints as they relate to this initiative.

Kevin Allcroft, Orrington Forester and Selectman

Frank Bragg, Bangor Land Trust

John Branson, former Orono City Councilor

Hope Brogunier, Bangor Mall/Marsh Commission, Bangor Land Trust, and Maine Audubon

Alan Bromley, Holden Planning Board Vice Chair

Ellen Campbell, Holden Town Councilor

Valerie Carter, Steering Committee member of Bangor Area Citizens for Responsible Development

Nancy Chaiyabhat, Hampden Community Services Committee, citizen volunteer

Brad Coffey, University of Maine Foundation

Dennis Cross, Veazie Water and Sewer District

Sue Dawes, Town of Holden Conservation Commission

Chris Dorion, Vice Chair of the Orono Planning Board and Orono Land Trust member

Nicki Farnam, Bangor City School Committee, former City Councilor

Linda Johns, Brewer Director of Planning and Brewer Land Trust member

Jerry Longcore, retired/active Orono citizen (projects include Bog Boardwalk project)

Dave Mahan, Old Town City Council President

John Manter, Veazie Conservation Commission

Laura Mitchell, Bangor Planning Board member and Bangor Land Trust Board member

Fritz Oldenburg, Bangor citizen and businessman

Paul Nicklas, Assistant City Solicitor, City of Bangor

Dave Ramsay, Hermon Planning Board member

Steve Ribble, Bangor citizen and businessman, Bangor Trails Committee member

Mike Riley, Superintendent Brewer Water Department

Nat Rosenblatt, Bangor Planning Board member

Jeff Thurlow, Eddington Planning Board member

Carolyn Wallace-Zani, City of Brewer, Parks and Recreation Advisory Commission

Ryan Warner, Holden Conservation Commissioner

Cary Westin, Parks and Recreation Advisory Board, City of Bangor

Gail White, Former President Orono Land Trust

Don Wiswell, Orrington Economic Development Committee

Appendix B

The Penobscot Valley Planning Summary by Municipality¹⁶

CITY OF BANGOR

Bangor has a state-certified Comprehensive Plan that was adopted in 2000 and updated in 2006. The city's Land Development Code and Zoning Ordinance were last comprehensively updated in 2000. The most recent update identified a number of code issues that require review. These include current subdivision standards and regulations, open space requirements, designation of industrial zones, and evaluation of the current Rural Resource and Agriculture Zone to recognize the transition of these areas from traditional farms, fields, and forests to low-density residential. The planning board has also called for the development of a new park and open space plan, including a citywide trail plan.

Several years ago, the city established a Bangor Mall Penjajawoc Marsh Task Force to address conflicts between commercial and residential development and protect the Penjajawoc Marsh. The task force developed a set of recommendations that clearly define the limits of commercial development, establish an

enlarged buffer zone around the marsh, and mandate cluster residential development near the marsh. These recommendations have been adopted through a zoning overlay. Such an approach is under consideration for other development in Bangor's rural areas.¹⁷ The Land Development Code presently requires subdividers to set aside 5 percent of their land area for open space; however, the code gives little additional guidance.

The city has a Resource Protection Zone that has been used to increase setbacks and prohibit development adjacent to special resource areas, including certain streams and wetlands. In addition to concerns over open space and rural development, Bangor has five streams that the state has identified as having poor water quality because of urban nonpoint source pollution. The city is currently working to develop watershed management plans for these streams.¹⁸

Bangor is in the process of revising its Comprehensive Plan, which is scheduled for completion in 2010.



A family enjoys biking in Bangor, by Jeff Kirlin

¹⁶ Research for the Penobscot Valley Planning Summary was conducted in 2008 and is current as of June 2008.

¹⁷ Bangor Comprehensive Plan, Physical Development Element, p. 11.

¹⁸ Bangor Comprehensive Plan Update, Natural Resources Element, p. 142.

TOWN OF BRADLEY

Bradley's state-certified Comprehensive Plan was last revised in 2004. The 2001 Land Use Ordinance is currently being revised and subdivision regulations were recently revised. To discourage linear development, the subdivision regulations provide provisions for cluster development, which oftentimes permits more open space set-asides and opportunities for recreation. In addition, requirements exist for half-acre lots.¹⁹

The State of Maine owns just over 7,000 acres in Bradley that were previously in paper company ownership. The state has not managed for timber under its ownership, and there is no management plan for the property; however, the Bureau of Parks and Lands has been involved with some management activities, including a timber-harvesting plan for part of the property, installation of a fishway on a dam, assessment of resources, and designation of land near Great Works Stream as a nonharvest area.²⁰

Going forward, the town plans to allow for continued growth, particularly in areas that are served or could be served by the public water system. Areas farther from the village have also been pinpointed as suitable for residential development but at lower densities than the village.²¹

Bradley does not have a scheduled date for updating its Comprehensive Plan.

CITY OF BREWER²²

Brewer's state-certified Comprehensive Plan was last revised in 1995. Its Land Use Code was recently revised and is now being amended to expand on subdivision regulations regarding open space criteria, off-site open space, and fee in lieu of open space requirements. The Land Use Code requires storm water runoff to be addressed in both quality and quantity.²³

Residents have identified the need for increased attention and control of surface water runoff from developed areas of the city in order to ensure good water quality. Shoreline stabilization of both rip-rap



A covered bridge in Bradley, by Jeff Kirlin.

and straight-face has been completed along portions of the Penobscot River with additional segments under construction and in progress.²⁴

The city wishes to bring the waterfront back to the center of economic and recreational activities as prior land use patterns pushed development outside the original downtown. Planning goals identified by the city include development and maintenance of areas to walk and bike, more efficient utilization of the Penobscot River shoreland, and revitalization of Wilson Street and Main Street (two of the most visible downtown streets). According to the plan, the sanitary sewer and storm water systems require capital investment as well.

Brewer is in the process of revising its Comprehensive Plan and aims to have it complete by spring 2009.

TOWN OF EDDINGTON

Eddington has a state-certified Comprehensive Plan that was revised in 2002 and last updated in 2004. There are no restrictions, open space set-asides, or limits on development. However, the Future Land Use Plan requires that all major new residential developments submit plans for open space/recreational areas.²⁵

Regarding land use, Eddington's Comprehensive Plan identifies the following goals: protect plant and wildlife habitats, ensure safe drinking water, replace

¹⁹ Bradley Comprehensive Plan, Land Use, p. 6-8.

²⁰ Ibid., p. 6-4.

²¹ Ibid.

²² Brewer Comprehensive Plan, 1995.

²³ Linda Johns, city planner, City of Brewer, written communication, July 2008

²⁴ Ibid.

²⁵ Town of Eddington Comprehensive Plan, Recreation Section, October 2002.

malfunctioning septic tanks, manage development in floodplains, encourage protection of open space and water resources, and ensure that environmental resources of all types are taken into account during the development review process.²⁶

TOWN OF HAMPDEN²⁷

Hampden's state-certified Comprehensive Plan was last revised in 2001. The town is currently in the process of redoing its Comprehensive Plan, and the land use goals and strategies provided therein are to be considered in draft form. With help from the town planning board, the town administers at least 14 land use and related ordinances including a Harbor Ordinance, Historic Preservation Ordinance, Subdivision Ordinance, and Zoning Ordinance. The zoning and subdivision regulations provide the basis of most local land use regulations.

General development goals for Hampden are to conserve open land for agriculture, forestry, recreation, scenic purposes, watershed protection, and wildlife habitat. Enhancing the rural landscape and small-town character or "village life" is also of great importance to Hampden. In order to keep "village life" in appropriate areas, the town would like to maintain the following: (1) a variety of lot sizes, (2) retail/business uses mixed with residential uses, (3) public and commercial services located in convenient walking distances, (4) interconnected streets with sidewalks, street trees, and other traffic-calming methods to promote safe pedestrian travel, and (5) areas of common green space for recreation and enjoyment.

To address conservation development goals, the city would like to establish certain policies to determine the following: (1) which lands to protect with conservation easements or through outright purchase, (2) the process by which the town will acquire or protect land, (3) management of conservation land, (4) funding and maintenance of acquisitions, and (5) what physical attributes constitute "rural character."

TOWN OF HERMON

Hermon's state-certified Comprehensive Plan was last revised in 1995. At that time, Hermon's land

use planning efforts were primarily focused on the potential effects development might have on the land and the land's ability to support development.²⁸ The primary tools that exist in Hermon to protect open space and natural resources are the local Shoreland Zoning Ordinance and Floodplain Management Ordinance. The planning board has been charged with creating a Land Development Review Ordinance that will incorporate standards from existing ordinances to provide a single document, easily available to the public.²⁹

One of Hermon's main goals is to "preserve the rural character and atmosphere of the community." In a community survey, 50 percent of respondents cite the rural character of Hermon as the reason they moved to the town. However, conflicts have arisen over concerns for preservation of agricultural land and forestland as the town is struggling to "maximize economic development, balance growth to maintain the rural character, and minimize property taxes and regulatory oversight."³⁰

In order to implement these policies, the 1995 Comprehensive Plan authors suggest that the planning board "prepare regulations for subdivisions and site developments which will preserve the maximum amount of open space (but not less than 60 percent of total parcel area) consistent with the soil potentials and potential agricultural and forestry uses of slow growth area sites for residential and commercial uses."³¹

Hermon is currently in the process of updating its Comprehensive Plan and expects that it will be complete by the summer of 2009.

TOWN OF HOLDEN

Holden's state-certified Comprehensive Plan was last revised in 2007. The Town of Holden has a Zoning Ordinance and a Subdivision Ordinance to address open space and development.

The town continues to face pressure to approve larger-scale developments than would be allowed in the limited commercial zone. According to the Comprehensive Plan, the Zoning Ordinance is

²⁶ Ibid., Natural Resources Section, F-24.

²⁷ Gretchen Heldmann, GIS/IT Specialist and Staff, written communication with Hampden Comprehensive Planning Committee, July 2008.

²⁸ Hermon Comprehensive Plan, 1995.

²⁹ Ibid., Implementation Strategies: Land Use.

³⁰ Ibid., Land Use: Agriculture and Forestry: Goals, Policies and Implementation Strategies.

³¹ Ibid.

wide ranging, but some changes were needed.³² Recommendations were to reduce lot sizes to encourage village-scale growth; alter the Community Service/Institutional Zone as it was nearly the same as the Limited Commercial Zone; and create a mechanism to provide for well-planned, village-type development along the proposed I-395 connector. Once these matters were unearthed, significant amendments to the Zoning Ordinance were made to reflect the wishes of the Comprehensive Plan. In addition, the town passed a new Conservation Subdivision Ordinance in April 2008 that requires fifty percent of lands designated for subdivision be set aside for open space.³³

Despite the 1995 Comprehensive Plan vision, which stated that most of Holden's future residential growth would occur in a new village zone, the opposite took place. Most of the growth has occurred in rural areas.³⁴ In January 2008 the Holden Conservation Commission identified that it will need to coordinate with the Holden Planning Board, Holden Land Trust, Eastern Maine Snowmobile Club, and other interested parties to develop goals, strategies, and association action plans for a recreational trail plan.³⁵ With the formation of this partnership, it appears that Holden is one of the only towns in the study area that is actively planning to make improvements or additions to its park and/or trail system.

TOWN OF MILFORD

Milford has a state-certified Comprehensive Plan that was revised in 1995. The town has a Land Use Ordinance and a Subdivision Ordinance.³⁶ The Comprehensive Plan identified areas where ordinances need to be revised or created. Revisions need to occur for "the Subdivision Ordinance to better address storm water management criteria and encourage open space development."³⁷ The Land Use Ordinance will need amendments to incorporate erosion and sedimentation standards, phosphorus control standards, and timber harvesting standards to protect

residential developments located adjacent to areas of timber harvesting. In general, performance standards for residential and light industry, commercial, and professional/office uses will need to be developed, but also in a way that will minimize the impact on natural resources.³⁸ A large portion of the Penobscot River shoreline in Milford is zoned as a Resource Protection District and the remainder of the shoreline is zoned as limited residential. The town will pursue grants to establish walking and biking paths and canoe access areas in order to support regional recreation opportunities for residents.³⁹

Milford is in the process of updating its Comprehensive Plan.

CITY OF OLD TOWN

Old Town's state-certified Comprehensive Plan was last updated in 1996. The town has a Subdivision Ordinance last updated in 2003 and a Zoning Ordinance last updated in 2006. There are no development limitations or setback requirements.⁴⁰

Old Town has identified downtown revitalization as a priority. Town planners recommend that future land use patterns reflect the present layout of the city so that residential infill will occur in the sewered areas, small-scale commercial growth will occur on Stillwater Avenue and downtown, some industrial development will occur on Gilman Falls Avenue, and small-scale, limited development will continue in the more rural areas of city.⁴¹ Currently, an impact fee zone is being discussed for Stillwater Avenue.⁴²

During the fall of 2008 Old Town plans to begin the process of updating its Comprehensive Plan.

TOWN OF ORONO

Orono's state-certified Comprehensive Plan was revised in 1998 and last amended in October 2001. The town has a Subdivision Ordinance and a Zoning Ordinance that was last updated in 2007. After

³² Holden Comprehensive Plan—Land Use, 9-4, http://www.holdenmaine.com/geninfo_brdscmte_planboard.htm.

³³ Stephen Condon, Community Development Director, Town of Holden, written communication, July 2008

³⁴ Ibid. http://www.holdenmaine.com/geninfo_brdscmte_planboard.htm.

³⁵ Town of Holden, Conservation Commission Recreational Trails Report, January 2008.

³⁶ Town of Milford Comprehensive Plan, February 1994.

³⁷ Ibid., p. 72.

³⁸ Ibid.

³⁹ Ibid., Natural Resources and Recreation.

⁴⁰ "Subdivision Ordinance of the City of Old Town, Maine," Sec. 18-112. General requirements.

⁴¹ Old Town Comprehensive Plan, Chapter 11. Summary of Findings, p. 11-2.

⁴² Peggy Daigle, City Manager, Old Town, written communication, June 2008.

review, the Subdivision Ordinance was found to lack environmental criteria and resource protection.⁴³ The Comprehensive Plan recommends that the Zoning Ordinance be amended to include sand and gravel aquifer protection standards and that the Forestry and Agricultural District be amended because the previous two-acre zoning “encourages transition from rural to suburban uses.”⁴⁴

The planning board is expected to continue to encourage the preservation of scenic areas and vistas in the development review process going forward.⁴⁵

Orono is in the process of updating its Forestry and Agriculture District, which comprises close to two-thirds of the town’s land area and is a major component of its Comprehensive Plan. A draft addendum has been completed for town council review.

TOWN OF ORRINGTON

Orrington’s state-certified Comprehensive Plan was revised in 2002. The town has a Zoning Ordinance last amended in 1997 as well as a Subdivision Ordinance. After review, the Comprehensive Plan recommends that both ordinances be amended to include standards to assure that proposed developments will mitigate adverse impacts on archaeological resources⁴⁶ and that a provision to allow for density bonuses and cluster housing be developed along with a water quality management plan.⁴⁷

Orrington has other plans in place for stream protection. The Sedgehunk Stream Fish Habitat Restoration Project, completed in May 2007, identified areas of concern, which include the restoration of Atlantic salmon in Sedgeunkedunk Stream and alewife in Field’s Pond. A repair or replacement to the Meadow Dam is proposed to maintain water levels, protect waterfowl and wading-bird habitats, and provide passages for migratory species of fish.⁴⁸

Regarding conservation development, Orrington aims to protect and preserve historic buildings and sites; protect and manage wildlife habitats and ecosystems; protect sand and gravel aquifers; control development

within identified floodplain areas; encourage protection of forest, farm, and water resources; and consider environmental resources in the site plan review process.⁴⁹

The town of Orrington is not currently scheduled to revise its Comprehensive Plan.

TOWN OF VEAZIE

Veazie’s state-certified Comprehensive Plan was last updated in 2003. The Veazie Planning Board administers a Land Use Ordinance that includes provisions for mandatory open space set-asides in subdivisions, cluster subdivisions, and growth management.

There is strong public support for protection of trails, scenic views, and wildlife habitat, and both the Veazie Conservation Commission (with the assistance of a consulting forester) and the Veazie Land Association (an affiliate of the Orono Land Trust) are actively engaged in managing and acquiring town conservation lands.

Future strategies to reduce the impact of residential growth include the creation of a conservation corridor (limited development), review and strengthening of applicable land use ordinance provisions, and cooperation with bordering communities on critical natural resource threats to the region. Veazie plans to enhance the viability of small agricultural and forestry operations through the acquisition of development rights, land use ordinance revisions, tax incentives, and encouraging local markets for agricultural and forest products.

Veazie will begin to update its Comprehensive Plan in 2010.

⁴³ Orono Comprehensive Plan, Amended October 1, 2001, Chapter II. Goals, Policies, Strategies, p. 11-12.

⁴⁴ Ibid., p. 11-13.

⁴⁵ Ibid., p. 11-14.

⁴⁶ Orrington Comprehensive Plan, Policy Plan, p. 1.

⁴⁷ Ibid. p. 6, 9.

⁴⁸ Ibid.

⁴⁹ Ibid., General Summary.

Appendix C Current Conditions

DEMOGRAPHICS

The residents of the Penobscot Valley represent 6.4 percent of the total 1.3 million population of Maine. The populations of the Penobscot Valley municipalities vary dramatically. Bangor has the largest population followed by Orono, approximately 31,000 and 9,710 residents, respectively. Bradley and Veazie have the smallest populations, 1,320 and 1,850 residents, respectively. The Penobscot Valley municipalities experienced different rates of population growth from 2000 to 2006. While the State of Maine had an increase of 3.7 percent during this period, the Penobscot Valley municipalities' growth ranged from negative 2.1 percent for Old Town to 16.1 percent for Hermon. See Table A for details on the region's population change and population projections.

Bangor, Brewer, Old Town, and Orono are expected to continue to lose population over the next 20 years, while the remaining municipalities will continue to grow. Projections indicate that Hermon is expected to maintain a high growth level, Bradley and Veazie will have moderate increases, and Orrington, Holden, Eddington, Milford, and Hampden will experience slower growth. The net result may be a 3.7 percent reduction in the total population in the Penobscot Valley. However, in light of the nationwide trend toward urban resettlement and increasing density,⁵⁰ the assumptions upon which these projections are based may no longer be valid.

Table A. Population Change in Penobscot Valley

Municipality	Population 2006	% Population Growth 2000-2006	Population Projection 2010	Population Projection 2015	Population Projection 2020	Population Projection 2025	Population Projection 2030	% Population Growth 2006-2030
Bangor	31,000	-1.48%	30,600	29,800	28,700	27,300	26,100	-15.80%
Bradley	1,320	5.87%	1,390	1,460	1,520	1,560	1,600	21.60%
Brewer	9,080	1.07%	9,170	9,140	9,030	8,820	8,640	-4.80%
Eddington	2,200	6.99%	2,210	2,260	2,290	2,290	2,300	4.17%
Hampden	6,770	7.20%	6,910	7,050	7,130	7,110	7,130	5.26%
Hermon	5,170	16.10%	5,440	5,910	6,330	6,660	7,000	35.50%
Holden	2,940	3.84%	3,060	3,130	3,180	3,190	3,210	9.10%
Milford	2,970	0.58%	3,110	3,180	3,220	3,210	3,230	8.55%
Old Town	7,720	-2.14%	7,670	7,470	7,200	6,860	6,550	-15.20%
Orono	9,710	4.06%	9,570	9,590	9,520	9,330	9,190	-5.35%
Orrington	3,620	2.75%	3,810	3,930	4,020	4,060	4,110	13.60%
Veazie	1,850	6.25%	1,950	2,040	2,100	2,130	2,180	17.40%

Source: 2006 U.S. Census Bureau and Maine State Planning Office - "Maine Economic & Demographic Projections by Municipality," <http://www.maine.gov/spo/economics/projections/index.htm>.

⁵⁰ See, e.g., "Back to the City?" Portland Press Herald, June 12, 2008, A1.

ECONOMICS

The Penobscot Valley region is well known for its traditional lumber industry. In the 1800s, the region was a significant lumber and shipbuilding center, but it also specialized in paper and pulp production. While forest-based industries remain an important element of the region's economy, the service sector, which provides over 90 percent of today's regional employment, has replaced the production⁵¹ of goods as the basis for the regional economy. Education (8,100 jobs), health services (9,500 jobs), and retail and wholesale trade (10,300 jobs) provide approximately 40 percent of the area's jobs. It is the transportation hub of the larger region, providing 3,300 jobs in transportation and distribution, and the center for lodging and restaurant services both for business visitors and tourists. Manufacturing plays a diminished role but remains one of the top five job sectors in the region.⁵²

The region has a rich educational environment. Husson College, Bangor Theological Seminary, Beal College, Eastern Maine Technical College, University College of Bangor, and the New England School of Communications are all located in Bangor, and the University of Maine, the flagship of the University of Maine system, is located in Orono. There is concern that Maine has experienced a "brain drain" as individuals seeking higher education often leave the state and do not return.⁵³

In the Penobscot Valley seven of the 12 municipalities have a household median income greater than that of the median for entire State of Maine at \$45,438. Table B presents the median household income and home value for each Penobscot Valley municipality. Median incomes range from \$33,118 in Bangor to \$67,551 in Hampden. Median home values tend to be lower than that of the State of Maine; median home values fall below \$185,900 in ten of the 12 municipalities.

Municipality	Median Income	Median Home Value
Bangor	\$33,118	\$145,750
Bradley	\$44,709	\$118,000
Brewer	\$44,175	\$145,000
Eddington	\$49,470	\$125,500
Hampden	\$67,551	\$174,950
Hermon	\$60,538	\$169,000
Holden	\$63,980	\$212,000
Milford	\$49,859	\$115,000
Old Town	\$37,163	\$119,450
Orono	\$35,282	\$155,000
Orrington	\$53,359	\$136,800
Veazie	\$56,639	\$192,000
Maine	\$45,438	\$185,900

Source: Maine State Housing Authority, "Bangor Labor Market Area Homeownership Facts 2007," <http://www.mainehousing.org/DATAHousingFacts.aspx>.

What follows is a description of the local municipal economies, including economic base and largest employers.

CITY OF BANGOR

Bangor has a heavily service-oriented economy; however, some manufacturing companies remain. The largest categories of private employment are education and health services (20 percent); retail trade (16 percent); professional and business (8 percent); leisure and hospitality (8 percent); manufacturing (4.2 percent); and construction (4.5 percent).⁵⁴ All percentages represent the share of total private employment. In terms of overall employment, government is a major category at 21 percent. Bangor acts as a center for employment and services for most of central, northern, and eastern Maine. The largest employers in Bangor are Eastern Maine Medical Center, the Bangor Mall, the University of Maine, the City of Bangor, and Hannaford Supermarkets.⁵⁵ Bangor also is home to the Bangor International

⁵¹ Richard George Wood, *A History of Lumbering in Maine, 1820-61* (Orono: University of Maine Press, 1971).

⁵² All statistics in this paragraph are from the Maine Department of Labor, 2005 and 2006 data.

⁵³ *Charting Maine's Future: An Action Plan for Promoting Sustainable Prosperity and Quality of Place* (Washington, DC: Brookings Institution, 2006).

⁵⁴ Ed Barrett, Bangor City Manager, written communication, May 8, 2008.

⁵⁵ City of Bangor, Maine Principal Employers, June 30, 2007.

Airport, providing access to the region and supporting a tourism industry that is crucial to Maine's economy.

TOWN OF BRADLEY

The Town of Bradley is a bedroom community of Bangor.⁵⁶ Residents generally work in neighboring communities in manufacturing (e.g., Red Shield Environmental and Old Town Canoe Company), the University of Maine, or Eastern Maine Medical Center.

CITY OF BREWER

The City of Brewer's economic base is a mix of manufacturing, health care professional centers, and retail.⁵⁷ The largest employers are Eastern Maine Healthcare, Lemforder, Wal-Mart, and Cianbro Eastern Manufacturing Facility. Located at a former mill site (which closed in 2004), Cianbro remediated the brownfield and opened a modular facility that recently began manufacturing modules that will be used to expand the Motiva oil refinery in Texas. The Cianbro site is expected to employ over 500 people.

TOWN OF EDDINGTON

The Town of Eddington's economic base is mainly residential, serving as a bedroom community for Bangor and Brewer.⁵⁸ The majority of businesses in Eddington are classified as small retail, service, construction, and maintenance. The three largest employers are Commonsense Housing, Katahdin Scout Reservation, and New Hope Hospice. In 2002, the top three taxpayers were Maritimes and Northeast Pipeline Co., Inc., Bangor Hydro Electric Company, and J. G. Faulkner.

TOWN OF HAMPDEN

The Town of Hampden's economic base is residential. Small retail and serviced-based commercial development has evolved to serve the primarily residential community. Although Hampden is still viewed and functioning as a bedroom community, the recent creation of a business and commerce park in the town is an indication of Hampden's willingness to diversify from dependence on its 87 percent residential



Railroad tracks run through a forest in Hermon, by Jeff Kirlin.

tax base. The largest employers are the Maine School Administrative District (MSAD) 22 school system, Edward's Shop 'n Save, and municipal government.

TOWN OF HERMON

Hermon's economic base is retail with a large trucking industry.⁵⁹ The largest employers in Hermon are Pine Tree Waste, Dysart's, Ryder Trucking, Lane Construction, and Vaugh Thibodeau.

TOWN OF HOLDEN

Retail and one small manufacturer are Holden's economic base.⁶⁰ The largest employers in Holden are the school district, Holden Cabinet, Rhodes Lumber, and Granville Stone.

TOWN OF MILFORD

The economic base of Milford is mainly small businesses.⁶¹ The largest taxpayers are PPE's hydropower dam and Maritimes and Northeast Pipeline Co. The largest employers are the Town of Milford and the school department.

CITY OF OLD TOWN

The economic base of Old Town is a mix of manufacturing, utilities, service, and construction.⁶² The top ten taxpayers are Red Shield Environmental, Penobscot Hydro LLC, Old Town Canoe Company,

⁵⁶ Melissa Doane, Bradley Town Manager, written communication, May 9, 2008.

⁵⁷ Ken Hanscom, Director of Parks and Recreation, City of Brewer, written communication, May 12, 2008.

⁵⁸ Penobscot Valley Council of Governments, Town of Eddington Comprehensive Plan, prepared for the Town of Eddington Comprehensive Plan Committee, October 2002.

⁵⁹ Clint Deschene, Hermon Town Manager, written communication, May 28, 2008.

⁶⁰ Stephen Condon, Community Development Director, Town of Holden, written communication, May 13, 2008.

⁶¹ Barbara Cox, Milford Town Manager, written communication, May 9, 2008.

⁶² Peggy Daigle, Old Town City Manager, written communication, June 4, 2008.

Old Town Plaza, LaBree's Bakery, H. E. Sargent Company, Penobscot River House, James W. Sewall Company, Bangor Hydro Electric Company, and Geraldine Dorsey. The top five employers are LaBree's Bakery, Old Town Canoe, Red Shield Environmental, John T. Cyr & Sons, and James W. Sewall Company. A recent economic strategy developed by Old Town focuses on combining the advantages of housing an aviation center with its outdoor recreation market to form a regional tourism economy. The city government has discussed collaborating with outdoor adventure companies to make canoe and whitewater-rafting trips available in an urban setting.

TOWN OF ORONO

Higher education is the primary economic base of Orono.⁶³ The University of Maine is the largest employer; rental properties serving students, ranging from single-family homes to large contemporary apartment complexes, are collectively the largest taxpayers; and the Target Technology Center in the Maine Research and Development Park helps to incubate businesses that spin out of university research and development. Other major employers and taxpayers include Dirigo Pines, a retirement home and assisted-living facility, and call centers operated by Bank of America and Microdyne.

TOWN OF ORRINGTON

The economic base of Orrington is 35 percent commercial and 65 percent residential.⁶⁴ Orrington has 90 small businesses and few manufacturing, services, or energy-related industries. The largest employers in Orrington are the school department, Penobscot Energy Recovery (PERC), Crescent Lumber, and Maine Test Boring.

TOWN OF VEAZIE

The Town of Veazie serves as a bedroom community for surrounding municipalities, but also contains a mix of smaller and larger economic enterprises.⁶⁵ Besides the Independence Station gas-fired power plant, local businesses include American Concrete, Lou Silver, Inc. (an excavation and earth-moving contractor), JC

Autobody, two convenience stores with gas service, Veazie Veterinary Clinic, Flagg's restaurant equipment company, a graphical display company, a car detailing company, and a moving and storage firm.

TRANSPORTATION

The Bangor Area Comprehensive Transportation System serves as the metropolitan transportation planning agency and works to coordinate regional transportation planning efforts with state and federal agencies to ensure an adequate multimodal transportation system. The region is served by Interstate 95 and a variety of state highways connecting to the Maine coast, the Maine highlands, and Downeast Maine. The BAT Community Connector public transit system provides bus service to Bangor, Brewer, Old Town, Veazie, Hampden, and Orono and has experienced consistent passenger growth in recent years. This growth, as well as the current increase in energy prices, has led to interest in expanding service hours and routes and a desire to explore regional transportation alternatives.

HISTORIC SITES

The 12 municipalities contain many special historic sites. In Bangor alone, there are nine historic districts, including large parts of the downtown area, a number of early residential districts once home to lumber and commercial barons, and 34 designated historic landmarks, including numerous private residences and public structures such as the Bangor Waterworks, Fire Station #6, and several churches. Existing historic structures could potentially benefit from the recently expanded State Historic Preservation Tax Credit,⁶⁶ making downtown and waterfront revitalization more feasible in the region. The Historic Preservation Tax Credit provides incentives for renovating existing historic properties and also covers small-scale projects valued as low as \$50,000.⁶⁷ This could benefit the region because historic town centers are a prevalent feature of the area as early settlement focused on the banks of the Penobscot River. Development in these already-established centers both encourages compact development and creates a sense of community.

⁶³ Evan Richert, Orono Planning Department, written communication, May 14, 2008.

⁶⁴ Carl Young, Orrington Town Manager, written communication, May 5, 2008.

⁶⁵ Bill Reed, Veazie Town Manager, written communication, May 16, 2008; "Welcome to Veazie, Maine" <http://www.veazie.net/> (accessed May 16, 2008).

⁶⁶ L.D. 262. H.P. 218: An Act to Amend the Credit for Rehabilitation of Historic Properties, <http://janus.state.me.us/legis/LawMakerWeb/externalsiteframe.asp?ID=280022599&LD=262&Type=1&SessionID=7>

⁶⁷ Kennebec Journal/Morning Sentinel, editorial, "Historic Sites Bill an Investment in Maine's Future," January 3, 2008, http://www.growsmartmaine.org/press/kennebec_010308.asp.

NATURAL AND RECREATIONAL FEATURES

The “quality of place” or livable, safe, distinctive communities that Maine has to offer set this state apart from others across the country.⁶⁸ There is plentiful open space, an abundance of lakes, streams, ponds, and rivers, as well as versatile terrain to travel and explore. The Penobscot Valley communities epitomize Maine’s features. This section focuses on the types of land use shared throughout the 12 municipalities and key land use initiatives in place, emphasizing natural resources, parks, and trails.

Across the region, a fairly high proportion of land is forested; little land is devoted to agriculture and areas of grassland are few. See Table C for more details. As described below, the proportion of developed land varies by municipality.

The region is perhaps best known for its proximity to the Penobscot River and its ability to support diverse wildlife habitat. Hunting and fishing, as well as abundant birding and wildlife viewing, provide great outdoor recreation opportunities. According to the Maine Department of Marine Resources, the Lower Penobscot operates as a “migratory pathway, spawning, nursery, and feeding area” for a range of sea-run fish

species such as the Atlantic salmon, alewife, blue-black herring, American shad, Atlantic and short-nose sturgeon, striped bass, sea lamprey, rainbow smelt, and brook trout. Also of habitat importance is Sunkhaze Meadows National Wildlife Refuge, located in Milford. Sunkhaze Meadows is an important part of the wetlands available for migratory birds. The Sunkhaze Stream watershed consists of approximately 100 square miles and provides protection for the black tern.

The Penobscot River Restoration Project will likely improve the fish stock in years to come with its “road map” for restoring the river, which includes the following objectives: “restore self-sustaining populations of native sea-run fish through improved access to nearly 1,000 miles of historic habitat; renew opportunities for the Penobscot Indian Nation to exercise sustenance fishing rights; create new opportunities for tourism, business and communities; and resolve longstanding disputes and avoid future uncertainties over regulation.”⁶⁹ An agreement already on file with the Federal Energy Regulatory Commission will give the Penobscot River Restoration Trust (PRRT) the option of purchasing three dams from PPL Corporation, and the two lowermost dams on the river, Veazie and Great Works, may be removed.

Table C. Land Use Percentages within Region and Member Communities

Class	Water	Developed	Forested	Shrubland	Grassland	Agricultural	Wetland	Barren	Total
Penobscot Study Area	4.2%	13.5%	55.3%	2.6%	0.3%	5.6%	18.3%	0.2%	100%
Bangor	1.5%	44.8%	32.0%	4.0%	0.4%	9.8%	7.1%	0.4%	100%
Bradley	2.9%	2.2%	66.0%	2.2%	0.0%	0.6%	26.3%	0.0%	100%
Brewer	2.3%	31.5%	39.8%	3.4%	0.7%	11.8%	10.4%	0.1%	100%
Eddington	5.9%	6.8%	70.1%	3.1%	0.3%	3.9%	10.0%	0.0%	100%
Hampden	2.8%	14.6%	61.3%	2.4%	0.3%	10.3%	7.5%	0.9%	100%
Hermon	2.5%	12.8%	46.9%	2.3%	0.4%	14.0%	21.1%	0.0%	100%
Holden	3.9%	6.5%	74.0%	1.8%	0.2%	4.6%	9.6%	0.1%	100%
Milford	0.6%	5.0%	53.6%	3.1%	0.2%	0.4%	37.1%	0.0%	100%
Old Town	10.0%	10.6%	49.0%	1.5%	0.2%	2.0%	26.5%	0.2%	100%
Orono	8.2%	19.1%	44.3%	2.8%	0.2%	3.3%	22.1%	0.0%	100%
Orrington	8.2%	10.4%	63.3%	3.6%	0.4%	7.4%	6.7%	0.1%	100%
Veazie	7.4%	38.9%	36.8%	5.0%	0.8%	7.5%	3.1%	0.6%	100%

Source: Data derived by The Trust for Public Land from the 2001 National Land Cover Dataset produced by the Multi-Resolution Land Characteristics Consortium, <http://www.mrlc.gov/index.php>.

⁶⁸ Bruce Katz, keynote presentation, GrowSmart Maine Summit III, Augusta Civic Center, October 2006.

⁶⁹ Penobscot River Restoration Trust, “Unprecedented Collaboration,” http://www.penobscotriver.org/content/4030/Unprecedented_Collaboration/.

Meanwhile, PPL Corporation will be able to increase power generation at remaining dams on the Stillwater River and elsewhere so that the current level of energy generation is sustained. The road map agreement was developed by the Penobscot Indian Nation, American Rivers, Atlantic Salmon Federation, Natural Resources Council of Maine, and Trout Unlimited, working with the U.S. Department of Interior, state agencies, and PPL Corporation.

While the area contains many healthy wildlife populations and opportunities for hunting and fishing, there are also numerous endangered and threatened species. In the study area these include lynx (threatened), Atlantic salmon (endangered), short-nosed sturgeon (endangered), black tern (endangered), and sedge wren (endangered). The Penjajawoc Marsh, which begins across Stillwater Avenue from the Bangor Mall, is one of the area’s most critical wetlands for migratory birds, and the Caribou Bog, located near Bangor and Orono, is rated as the third most important bog in the state.⁷⁰ Highlighting the importance of the bog is a recent grant given to the Caribou Bog-Penjajawoc Project Committee through the North American Wetlands Conservation Act. This grant will fund the protection of three miles of shoreline stretching through a greenway corridor beginning just north of the Bangor Mall and running to the Hirundo Wildlife Refuge in Hudson and including 3,800 acres of wetlands and surrounding uplands.

The region is also characterized by widespread trail systems, and partnerships are forming to expand and integrate these systems and ensure trail maintenance. Quality trail systems are recognized as a neighborhood amenity, and regional cooperation has been highlighted as a key factor to achieving these goals. Existing or planned regional trail systems include the Eastern Maine Snowmobile Club’s (EMSC) trail system, the Maine East Coast Greenway, and the Downeast Sunrise Trail. EMSC’s trails link to Maine’s interconnected trail system and extend to Holden, Eddington, Brewer, Orrington, and Milford. The East Coast Greenway is planned to extend all the way south to Florida, covering 3,000 miles. Finally, the Downeast Sunrise Trail is a 144-mile-long, multiuse corridor connecting the region to Downeast Maine.

Table D contains a list of conserved land in every municipality. The following describes the natural resources, parks, and trails specific to each municipality.

CITY OF BANGOR

Approximately 45 percent of the City of Bangor’s land area is developed. It is generally characterized by its superficial geology (glacial deposits, stream alluvium), steep slopes, bedrock geology, and the Penobscot River, which is perhaps its most valuable asset. The city is divided into a number of watersheds draining into the river or its tributaries, the most significant

Table D. Penobscot Valley Conservation Lands

	Total Acres	Percent of Study Area	Conservation Lands Acres	Percent of Jurisdiction
Study Area	239,444	100.0%	38,598	16.1%
Bangor	22,358	9.3%	2,359	10.6%
Bradley	32,531	13.6%	12,369	38.0%
Brewer	9,998	4.2%	831	8.3%
Eddington	16,960	7.1%	1,792	10.6%
Hampden	24,943	10.4%	246	1.0%
Hermon	23,469	9.8%	49	0.2%
Holden	20,534	8.6%	10	0.0%
Milford	29,285	12.2%	10,944	37.4%
Old Town	27,301	11.4%	7,542	27.6%
Orono	12,541	5.2%	2,336	18.6%
Orrington	17,536	7.3%	26	0.1%
Veazie	1,988	0.8%	94	4.7%

⁷⁰ “Land Trusts Awarded \$666,566 Grant” By Aimee Dollof, Bangor Daily News, March 26, 2008.

of which include the Kenduskeag Stream and the Penjajawoc Stream/Meadow Brook. One wildlife habitat deemed “significant” by the Natural Resources Protection Act lies within the Penjajawoc Marsh. This marsh is a large, emergent freshwater marsh with expanses of cattail, sedges, and alder. A 1983 inventory by the Maine Geological Survey (MGS) identified six other wetlands of ten acres or more in, or partially within, Bangor.⁷¹ Five of Bangor’s watersheds, including one shared with Hampden and Hermon, have been designated as impaired by the Maine Department of Environmental Protection.



A wooded pond in the Penobscot Valley, by Ásgeir J. Whitney.

Bangor provides 30 primarily urban parks and play areas totaling approximately 500 acres, many of which serve as focal points for high-density residential neighborhoods. In addition, the city owns and maintains four forests, the largest of which, the Rolland F. Perry City Forest, is a 650-acre tract located in the northeastern corner of the city in proximity to the Penjajawoc Marsh and adjacent to nearly 500 acres owned by or promised to the Bangor Land Trust as part of the Walden-Parke Preserve and Northeast Penjajawoc Preserve. The trail system within this forest, which will be connected to a similar system in the Walden-Parke Preserve, is extremely popular, making clear the need for additional parking areas to meet demand.

Development continues on the city’s waterfront park on the Penobscot River. In addition, the city is participating with the Bangor Land Trust and Keep Bangor Beautiful on the Bangor Trails project, an effort to develop a master plan for a citywide trail system.

The City of Bangor’s Comprehensive Plan indicates that there are a number of unmet needs for park and recreation facilities. The plan also indicates that additional and upgraded parks will be required in the future as the city continues to grow and develop.

TOWN OF BRADLEY

Two percent of Bradley is developed. Development in Bradley is concentrated in Bradley Village, located in the northwest corner of the town. Large landowners occupy about 66 percent of the town’s land area. These include the State of Maine, Webber Timber, H. C. Haynes, and the University of Maine Foundation.⁷² According to 2002 tax records, 27 parcels—totaling 20,930 acres, or 72 percent of the town’s land—are classified under the Tree Growth Tax Law.⁷³ This land includes softwood, mixed woods, and hardwoods. A number of valuable wildlife resources are within the town, including riparian habitat, large habitat blocks, and a number of high-value plant and animal habitats.

Finally, wetlands cover about half of the land area (according to National Wetlands Inventory of Bradley),⁷⁴ floodplains cover about 25–30 percent of the town’s land area,⁷⁵ and approximately 80–90 percent of all the soils throughout the community have low or very low potential for low-density development.⁷⁶

There are opportunities for outdoor recreation at Small Town Park (baseball field) and playground

⁷¹ This survey does not include some more extensive areas that meet other state and federal wetland definitions. It is widely understood that this survey is not accurate; however, it is the only official wetland listing provided to the city by the state.

⁷² Town of Bradley Comprehensive Plan, Land Use Element, p. 6-2, 2004.

⁷³ Town of Bradley Comprehensive Plan, 2004, Land Use Element, p. 6-5. The Tree Growth Tax Law, enacted in 1972, provides tax advantages to property owners with at least ten acres of forested land who manage their lands for commercial harvesting. Forestland is assessed on the basis of productivity or its current use. This tax advantage is given in order to provide an incentive to manage the land on a sustained-yield basis and not to strip and sell the land for development (Forest Ecology Network, Maine Woods, Winter 2000, http://www.forestecologynetwork.org/TMW/LateWinter2000/Tree_Growth_TaxLaw.htm). A Forest Management and Harvest Plan must be prepared and a sworn statement to that effect submitted with the application. Each year, the State Tax Assessor determines the 100 percent valuation per acre for each forest type by county and by year. If the forestland no longer meets the criteria of eligibility or the landowner opts to withdraw from tree growth classification, then a penalty is determined (Maine Revenue Services, <http://maine.gov/revenue/propertytax/propertytaxbenefits/CurrentUseLandPrograms.htm>).

⁷⁴ Town of Bradley Comprehensive Plan, Natural Resources Element, p. 5-5, 2004.

⁷⁵ Ibid.

⁷⁶ Town of Bradley Comprehensive Plan, Natural Resources Element, p. 5-1, 2004.

facilities at the school. The town does not have a recreation program, but children can participate in recreation programs in Old Town.⁷⁷

CITY OF BREWER

The City of Brewer, at slightly over 30 percent developed, has a relatively high percentage of developed land compared to most other cities and towns in the study area. Several watersheds, including Eaton Brook, Felts Brook, Sedgeunkedunk Stream, Fields Pond, and the Penobscot River, which forms the western boundary of the city,⁷⁸ characterize the city. Rural woodlands have “important water quality, visual, recreational ... but little commercial value.”⁷⁹ There are some softwood stands used for deer wintering areas, and forested wetlands are home to reptiles and amphibians. Forested stream banks provide wildlife travel corridors, while also shading the streams themselves, which creates good fisheries habitat.⁸⁰ Brewer also contains two waterfowl and wading-bird habitats—Railroad Marsh and Wiswell Road Marsh—that are both rated as moderate for habitat value. At the mouth of Easton brook is a bald eagle nesting site that is deemed essential by the Department of Inland Fisheries and Wildlife (DIFW).

Brewer has a network of parks and playgrounds for the community’s outdoor recreation needs. These include Creative Playground, Capri Street School, Indian Trail Park, Washington Street School, Eastern Park, Pendleton Street School, Memorial Field and Track, School Street Playground, Maple Street Park, and Fling Street Tot Lot. Brewer’s most recent Comprehensive Plan sets a goal to develop pathways along the Penobscot and on the inactive Calais rail line, as well as trails along feeder streams. The city recently approved preservation of a ten-acre neighborhood parcel as open space, and a nature trail has been created on the property, now called Sherwood Forest. City officials and Brewer Land Trust are considering other trail connections with the goal of providing a network of interconnected trails.

TOWN OF EDDINGTON

The Town of Eddington primarily consists of forested land and shares Davis Pond and Holbrook Pond with Holden, Fitts Pond with Clifton, and Chemo Pond with Clifton and Bradley. The Penobscot River borders Eddington to the west, and all of Eddington’s lakes and ponds are classified as suitable for designated uses, including drinking water after disinfection, recreation in and on the water, fishing, industrial process and cooling water supply, hydroelectric power generation, navigation, and as habitat for fish and other aquatic life.⁸¹ The 2000 Municipal Valuation indicated that 1,603 acres in 24 parcels were listed in the tree-growth program.

Most of the town’s land is privately owned. The Holbrook Regional Recreation Committee serves residents in Clifton, Dedham, Eddington, and Holden. Other public recreational opportunities and facilities are provided through School Administrative District (SAD) 63 at the Holbrook School in Holden. In addition, Eddington is home to Blackcap Mountain, a scenic area that now houses many different towers but is a highly popular Boy Scout area. Public recreational facilities include a ballpark and a skating rink. However, the ballpark is rarely used and the rink is not municipally maintained.⁸² There is no public boat launch in town, but there are two campgrounds, Deans Landing on Chemo Pond with beach access and Greenwood Acres on Route 178, which has a public pool. Residents have expressed an interest in recreational areas that would include walking and bike trails.⁸³

TOWN OF HAMPDEN

The Town of Hampden is located just south of Bangor and Hermon and is 24 percent developed, generally as low-density residential. Eight percent of the town is in agriculture while 59 percent of the land area remains forested. Nine percent of the town comprises open water and forested and nonforested wetlands. Forests provide habitat and an attractive rural setting while also serving to protect wetlands and buffer

⁷⁷ Ibid.

⁷⁸ Brewer Comprehensive Plan (Part 1), p. 22, 1995.

⁷⁹ Brewer Comprehensive Plan (Part 1), p. 2, 1995.

⁸⁰ Brewer Comprehensive Plan (Part 1), p. 32, 1995.

⁸¹ Town of Eddington Comprehensive Plan – Natural Resources, October 2002.

⁸² Town of Eddington Comprehensive Plan – Recreation, p. G-1, October 2002.

⁸³ Town of Eddington Comprehensive Plan, Recreation, p. G-2, October 2002.

streams, rivers, ponds, and the town's groundwater. Part of Hermon Pond is located in Hampden, and it is considered the most developed pond in town. Like many of the other towns in the valley, Hampden has a number of surficial geologic types, including eskers, swamps, glacial till, glaciomarine deposits, and thin drift. Twelve percent of the rural soils are rated "good" for agriculture, forestry, and development, creating a potential for conflicts between land uses.

Hampden houses the Dorothea Dix Park, the SAD 22 athletic fields, the Papermill Road Recreation Area, the Lura Hoit Memorial Pool site, as well as the townwide trail system utilized and maintained by the Goodwill Riders Snowmobile Club. Seven multipurpose fields are located in the town, which in 2001 were identified as areas having high value for residents of the town. The town has deemed parks underutilized and undermanaged; however, the most recent draft revisions to the Comprehensive Plan set goals to more actively manage open space and parklands to make them more attractive for resident use.⁸⁴

TOWN OF HERMON

The Town of Hermon is located west of Bangor. Hermon shares Hermon Pond, Souadabscook Stream, Black Stream, Ben Annis Pond, and Hermon Bog with its neighboring municipalities. Besides an extensive snowmobile trail network, Hermon has a trail system connecting Hermon High School with Hermon Elementary School.⁸⁵ Ecotat is a noteworthy preserve in Hermon with extensive trails and gardens.

The town is seeing changes in land cover resulting from the conversion of agriculture and forested land to housing. While the town does not anticipate a return to the rapid growth of the 1980s, Hermon will continue to grow, probably faster than other communities in the region. The town planning committee's intent is to provide policies and strategies that will allow growth while protecting areas and resources that cannot be replaced or restored if development overwhelms them. Projects outlined for 2007 included revitalizing community parks as well as repairing equipment on existing playgrounds. The town is also currently developing a Village Master Plan



The Stillwater River in Orono, by Jeff Kirlin.

to improve town aesthetics, pedestrian and vehicular safety, and access with sidewalks to existing trails.

TOWN OF HOLDEN

The Town of Holden is characterized by forest (90-95 percent) and, like Eddington, the land is mostly privately owned. Fields Pond Audubon Center, located on 192 acres of forest, meadows, and wetlands, provides natural history programs, field trips, and camp programs. The Maine Audubon Center and the Holden Community Learning Nature Trails are the only public use trails in Holden. There are many other trails that are located on private property. The town recognizes that public access to these trails is wholly dependent on the willingness of landowners to grant access and could potentially decrease over time if land is developed or sold.⁸⁶

A survey about trail use in Holden concluded that residents desire trails for jogging, biking, skiing, snowmobiling, bird watching, dog walking, picnicking, horseback riding, aesthetic purposes, and ATVs, as well as for viewing flora and fauna.⁸⁷ The Conservation Commission's Recreational Trails report concludes that coordinated efforts among the Holden Planning Board, the Holden Land Trust, the Eastern Maine Snowmobile Club, and any other relevant and interested group must be undertaken to reach desired trail connectivity goals.⁸⁸ To that end, Holden formed a committee to lead the development of an Open Space Plan that will outline the vision, priorities, and

⁸⁴ Gretchen Heldmann, GIS/IT Specialist and Staff, written communication with Hampden Comprehensive Planning Committee, July 2008.

⁸⁵ Hermon Comprehensive Plan, 1995.

⁸⁶ Town of Holden, Conservation Commission Recreational Trails Report, January 2008.

⁸⁷ Ibid.

⁸⁸ Ibid.

strategies for parks, trails, recreation, and conservation for the community over the next 20 years.

TOWN OF MILFORD

Milford is characterized by gently rolling to flat topography with several water bodies and marshy areas. Sunkhaze Stream is located west of the town center and drains into the Penobscot River. There are 36 freshwater wetlands, three of which the DIFW has rated as being of moderate value and thus requiring a Resource Protection District around them. In addition, two rare or endangered plants are found in Milford: *Carex oronensis* and *Lampsilis cariosa*. Ten to 15 years before Milford's 1994 Comprehensive Plan, development was predominantly in single-family residential homes. Forest and agricultural land was generally "converted" to allow for such residential growth.⁸⁹

Located in Milford are the Milford Playground on Davenport Street as well as a Wildlife Conservation area in the center of town and the Sunkhaze National Wildlife Refuge, which comprises 11,279 acres of forest, wetlands, and streams. Sunkhaze Meadows NWR is a noted bird watching area during bird migrations, and Sunkhaze Stream affords many opportunities to observe wildlife in a natural environment. Other recreation opportunities in Milford include the Lewis Libby School (baseball, basketball, playground), Milford Honor Roll Park (one acre grassy area), Vernon A. Cunningham, Jr. Municipal Building (picnic and recreation hall), four recreational programs funded by the town, and trails built and maintained by the Pine Tree Snowmobile Club. Like many other trail systems in the study area, these are located on private property.⁹⁰

TOWN OF ORONO

Orono's village and historic settlement lies along the Stillwater River near its confluence with the Penobscot. Most of the University of Maine's built campus is located across the Stillwater on Marsh Island about one mile from the downtown. The rural area of town, as designated by Orono's Comprehensive Plan, comprises almost two-thirds of the community, including essentially all land to the west of I-95 and

a majority of land located between I-95 and the Penobscot River south of Kelley Road. These rural areas are outside the sewered area, are mainly wooded with some farmland, and include portions of Pushaw Lake, Caribou Bog, and a significant amount of wetlands.

The Maine Department of Environmental Protection deems Pushaw Lake, located in Orono and Old Town, a "high-priority lake" due to the potential risk to the lake from nonpoint source pollution.⁹¹ Phosphorous runoff into the lake is a threat that will likely increase as seasonal homes are converted to year-round use.

The Orono and Caribou bogs are components of "an expansive 6,000-acre peat land ecosystem," which the Maine Natural Areas Program has deemed a "rare natural community." The Newman Preserve, also located in Orono, provides wading-bird habitat. The town, with assistance from the University of Maine, is in the process of mapping significant vernal pools in the town, which will give additional insight into habitats and land characteristics.⁹²

The town is served by two in-town public parks, a University of Maine bicycle trail, and an extensive trail system within walking distance of in-town homes, much of it on private property. There are several points of public access to the Stillwater and Penobscot rivers.

TOWN OF ORRINGTON

The Town of Orrington is bordered by Brewer to the north, Holden to the east, Bucksport to the south, and the Penobscot River to the west. Like most of the other towns in the river basin, Orrington was once a shipping and shipbuilding community. Important natural resources include deer wintering areas, waterfowl and wading-bird habitats, freshwater wetlands, and sand and gravel aquifers. Baker Brook, Sedgeunkedunk Stream, Swetts Pond, Mill Creek, and Trout Pond (and the outlet) lie within the town.⁹³

The Town of Orrington's conservation commission maintains the following sites: a picnic area on the Penobscot, the boat launch at Brewer Lake, and the

⁸⁹ Town of Milford Comprehensive Plan, Natural Resources Section, February 1994.

⁹⁰ Ibid., Recreation Section.

⁹¹ Orono Comprehensive Plan.

⁹² Ibid.

⁹³ Orrington Comprehensive Plan, G. Natural Resources, 2002.

Richardson Tract on Kings Mountain, a 160-acre preserve containing trails and natural habitats. A dam between the Penobscot and Field's Pond is being replaced with a rock-ramp dam to allow fish passage. This site is also being preserved for kayaking and as a picnic area, and an extensive trail system is accessible from Fields Pond. The former Holtra-Chem property (a very costly and long-term mercury cleanup site) comprises over 200 acres on the Penobscot River and is being considered for future trails and river access.

Orrington is home to part of the Audubon Nature Center (much of this preserve extends into Holden) and the Curran Farm, which is a living 1800s farm preserved in its original condition adjacent to the Audubon property on Fields Pond. The Orrington Trail Riders' Snowmobile Club also has an extensive trail system in the area. Many of the town's outdoor recreation opportunities are located on private land, and loss of public access would have adverse effects on the community.⁹⁴

CITY OF OLD TOWN

The City of Old Town is rich in water resources as 10 percent of its land area is covered by wetlands, the Penobscot and Stillwater rivers, Pushaw Stream, Mud Pond, and Pushaw Lake. Large wetland areas that border Pushaw Stream and the Caribou Bog take up much of the western portion of the city.⁹⁵

Recreation opportunities include Alumni Stadium, Marden Bank, Mahoney Island, Old Town Park, Spencer Park, and Webster Park. The City of Old Town is considering a partnership with the University of Maine to establish a research-and-development park on a 120-acre land parcel. The university already maintains 22 miles of trails.⁹⁶

TOWN OF VEAZIE

At approximately 40 percent, the Town of Veazie trails closely behind Bangor in its developed land percentage. The Penobscot River runs through the town; however, as of the 2001 Comprehensive Plan, there was no public access. The plan calls for negotiations with riverfront property owners to develop a public boat access and recreation area highlighting the scenic river. As of 2008, the town contained roughly 100 acres of public forest and recreational fields, and the Veazie Conservation Commission and the Veazie Land Association, an affiliate of the Orono Land Trust, were promoting land conservation and management efforts in the town.

⁹⁴ Orrington Comprehensive Plan – H. Recreation, 2002.

⁹⁵ Old Town Comprehensive Plan – Chapter 11. Summary of Findings.

⁹⁶ Interview with David Mahan, Old Town City Council President, March 20, 2008.

Appendix D

Public Outreach for Listening Sessions

- Bangor Land Trust (BLT) membership list was mailed a flyer and received e-mails.
- BLT Board members were given BLT membership list with phone numbers and asked to phone at least five members to remind them to attend.
- Bangor Area Citizens Organized for Responsible Development (BACORD) mailing list was mailed a flyer. (850 postcards in regular mail and flyer by e-mail).
- Maine Audubon, Bangor Location members were emailed a flyer. Flyers were also passed out and participants urged to attend at least five of Fields Pond (Maine Audubon) May birdwalks. 10-20 people at each birdwalk—lots of repeat attendees heard it many times.
- Geoff Gratwick (Bangor City councilor) announced the listening sessions at least once at the end of City Council meeting.
- Geoff Gratwick announced the listening sessions at Rotary
- Stakeholder Group and Steering Committee members were e-mailed and asked to forward flyers.
- Representatives on Steering Committee were asked to post flyers in town offices and to contact municipal officials in constituent communities.
- 3 large posters (17x22) were distributed to each of nine individuals identified as active volunteers.
- Press releases were issued twice: once to describe the Greenprint and once to re-announce the meetings. This resulted in a front page (state section) Bangor Daily News article, a later follow-up article on the sessions, and a third follow-up in the wake of the sessions, and a front page and a follow-up article in the Penobscot Times.



Bangor City Forest, by Joni Dunn.

- Bangor City Manager Ed Barrett was interviewed on camera by Channel 7 regarding the Greenprint.
- Ed Barrett and Jim Gooch drafted an op-ed that was sent out over Ron Harriman's name and published as an op-ed by both Bangor Daily News and the Penobscot Times.
- Linda Johns gave a copy of the announcement flyer to each Brewer Planning Board member and announced the dates, times and purpose of the listening sessions at the planning board meeting. She also gave a copy of the flyer to each BLT Board of Director and announced at the BLT meeting, sent out notices to each Brewer City department head and Brewer City councilors, placed the notice on the Brewer City web site, sent out the notice on the Brewer City e-list, and posted on bulletin boards.

Appendix E - Penobscot Valley Community Greenprint Model - Model Overview - September 17, 2008

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
Protect Habitat and Unfragmented Natural Areas	Unfragmented Blocks of Natural Lands	24%	Landcover 2004 Maine Public Roads Beginning with Habitat Undeveloped Blocks Urban Boundary	ME GIS ME GIS BwH Steering Committee	This model identifies large contiguous patches of natural area, at least 150 acres in size in rural areas (and at least 50 acres in urban areas), that are unfragmented by paved roadways. Habitat types used to define "natural areas" include: Grassland/Herbaceous, Deciduous Forest, Evergreen Forest, Mixed Forest, Shrub/Scrub, Wetland Forest, Wetlands, Blueberry Field, Unconsolidated Shore, Recent Clearcut, Light Partial Cut, Heavy Partial Cut, Regenerating Forests and Agriculture. In Rural Areas - priorities were assigned as follows: 150 - 1000 acres = moderate priority, 1000-5000 = moderate-high priority, 500+ acres = highest priority. In Urban Corridor - priorities were assigned as follows: 50 - 200 acres = moderate priority, 200-500 = moderate-high priority, 500+ acres = highest priority. Note this model uses the same methodology used in the Beginning with Habitat Undeveloped Habitat Blocks model, but includes smaller blocks (150-500 acres) for increased relevance at the local level.
	Undeveloped Buffers Surrounding Natural Lands	4%	Landcover 2004 Roads	ME GIS ME GIS	This model buffers all natural landcover areas by 300 feet. Cover types considered "natural" include Grassland/Herbaceous, Deciduous Forest, Evergreen Forest, Mixed Forest, Shrub/Scrub, Wetland Forest, Wetlands, Blueberry Field, Unconsolidated Shore, Recent Clearcut, Light Partial Cut, Heavy Partial Cut, and Regenerating Forests. From this buffer, roads were removed. The results were then weighted by landcover class: Developed, High Intensity = 1(weighted lowest), Developed, Medium Intensity = 2, Developed, Low Intensity and Bare Ground = 3, Cultivated Crops and Pasture/Hay = 4, Developed, Open Space = 5 (weighted highest)
	Rare and Endangered Species	16%	Digitized habitat of rare wildlife species Gulf of Maine Habitat Suitability Study Bald eagle nest sites Locations of wildlife species that are endangered, threatened, or of special concern Locations of rare plants and rare and exemplary natural communities and ecosystems	ME Department of Conservation - Beginning with Habitat USFWS	Several datasets were used for this model. The Gulf of Maine Habitat Suitability Study was used as a baseline. This dataset includes 11 federally listed Threatened or Endangered species ranked by siting frequency and suitability. The scores were used to rank these species in the model: scores of 1-9 received a moderate priority value; scores of 10-20 received a moderate-high priority rating. All data on rare and endangered species known locations including the Natural Areas Program, Bald Eagle Nesting Sites, Natural Heritage Program and federally listed habitat suitability data that scored 22-30 received a High priority rating.

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
	Aquatic Wildlife Habitat	8%	Brook Trout Streams 250 foot buffer Coastal Areas 250 foot buffer Ponds 250 foot buffer Rivers 75 foot buffer Streams 250 foot buffer Wetlands 250 foot buffer Atlantic Salmon Habitat Inland Waterfowl and Wading Bird Habitat Tidal Waterfowl and Wading Bird Habitat Habitat values for 4 anadromous fishes (shad,alewife, blueback herring, salmon) Habitat Suitability model for waterbirds Habitat suitability for 9 water and shorebirds	ME Department of Conservation - Beginning with Habitat USFWS USFWS USFWS	This model incorporates a number of aquatic habitat datasets: <ul style="list-style-type: none"> • All waterbody buffers are scored as high priority using Beginning with Habitat buffer definitions (250 ft. on coastal areas, water bodies, rivers, wetlands, salmon habitat, 75 ft buffer on streams). • Inland Waterfowl and Wading Bird Habitat were scored as high priority. • Tidal Waterfowl and Wading Bird Habitat were scored as high priority. • Habitat for anadromous fish (shad,alewife, blueback herring, salmon) was scored based on The Gulf of Maine Habitat Suitability Study siting frequency and suitability scores. • Habitat for water birds (14 species) was scored based on The Gulf of Maine Habitat Suitability Study siting frequency and suitability scores. • Habitat for water and shore birds (9 species) was scored based on The Gulf of Maine Habitat Suitability Study siting frequency and suitability scores.
	Habitat Diversity	24%	Landcover 2004 Maine Public Roads Hydrology - Coastal area Streams Hydro Lines National Wetlands Inventory Maine Natural Areas Program Bald Eagle nest sites Inland Waterfowl and Wading Bird Habitat Tidal Waterfowl and Wading Bird Habitat Natural Heritage Sites Coastal Buffer	ME GIS ME GIS ME GIS ME GIS ME GIS ME GIS National Wetlands Inventory Beginning with Habitat Beginning with Habitat Beginning with Habitat Beginning with Habitat Beginning with Habitat TPL	This model uses a Habitat Diversity Framework, adapted from Sagadahoc Region Rural Resource Initiative, that scores habitat blocks based on their potential for supporting multiple habitat types. Scores were assigned as follows: <ul style="list-style-type: none"> • Natural Area landcover broken into 3 types, forest, shrub and grassland, points given if Blocks were 5-30 acres = 1 point, 30-75 = 2, 75+ = 3; • Coastal Riparian 75 foot buffer = -, 250 foot buffer = 1; • Surface Water 75 Foot Buffer = 1 point; • Wetland 75 foot Buffer = 1 point; • Species ranked S1 or G1-G3 = 4 points, ranked S2,S3 or G4 = 2 pt, within 250 foot buffer of any ranked species = 1 point; • Eagle Nesting Site = 4 points; • Inland or Coastal Wading Waterfowl = 2 points; • Contains Heritage site = 1 pt; All values summed and weighted based on final score.

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
	Habitat Connectivity Corridors	16%	Maine Natural Area Program Sites Natural Heritage Sites Bald Eagle Nesting Sites Deer Wintering Areas Sedge Wren Habitat Landcover Rivers and Streams Protected Land Major Wetlands	BwH BwH BwH BwH BwH ME GIS NHD TPL Assembled BwH	This model connects Beginning with Habitat data (Deer Wintering Areas, Eagle Nesting Sites, Heritage Sites, Natural Areas Program, Sedge Wren Habitat) to existing protected land and/or wetlands via rivers, streams and natural landcover types. All possible corridors are high priority.
	Terrestrial Wildlife Habitat	8%	Maine Focus Area from State Wildlife Action Plan Deer Wintering Areas USFWS Region 5 Migratory Bird Management Office Priorities for Conservation Partners in Flight Priorities USFWS raptor songbird priorities USFWS songbird habitat priorities USFWS shorebird habitat priorities	Beginning with Habitat USFWS USFWS USFWS USFWS USFWS	This model scores all Maine Wildlife Focus Areas and Deer Wintering Areas as high priority. In addition, the following datasets provided scores to indicate where the greater number of respective species can find quality habitat: 1) USFWS Region 5 Migratory Bird Management Office Priorities for Conservation 2) Partners in Flight Priorities 3) USFWS raptor songbird priorities 4) USFWS songbird habitat priorities 5) USFWS shorebird habitat priorities

Criteria Weighting Rationale: Preservation of large blocks of unfragmented lands and habitat diversity were identified as the most critical factors in protecting habitat. Protection of connectivity corridors between these blocks and other sensitive species sites were also identified as high priority. Aquatic and terrestrial habitats were already given emphasis if they occurred within unfragmented blocks and/or highly diverse areas.

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
Maintain Scenic Values and Protect Scenic Vistas	Scenic Landscapes - Open Lands, Farms, and Rivers	22%	Ridgeline for viewing study area Ridgeline for viewing study area Rivers and Streams Lakes and Ponds Major Wetlands Parks and Protected Land DEM Landcover	TPL ME GIS ME GIS ME GIS DNR, Bangor Land Trust USGS ME GIS	This model identifies scenic areas viewable from high elevation points. Scenic areas included existing parks and protected land, agricultural areas and water features including wetlands greater than 10 acres. Viewshed was determined for high points greater than 656 feet, (200 meters). Only two areas meet this criteria. 3 more selected summits were chosen, Coffey Hill, Pickard Hill and Kelley Hill. Viewsheds from different points were combined to give each scenic area a score for the number of viewpoints that could see that scenic area. If all 5 viewpoints could see a scenic area, it received a high priority (5). If only 4 viewpoints could see an area then it got a moderate-high score (4). 3 viewpoints = Moderate (3), 2 viewpoints = Low-Moderate (2) and only 1 viewpoint = Low (1)

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
	Hills, Ridges, and High Points	22%	DEM Landcover 2004	USGS ME GIS	This model assigns a weighted value to different elevation groups, areas 656 feet or higher received a high priority score. 492 - 656 = 4, 246 - 492 = 3, 164 - 246 = 2, 32 - 164 = 1, 0 - 32 = 0
	Historic Places	6%	National Registry - point locations Sensitive Native American Areas Archeological Sites with 1/2 km buffer Large National Registered Properties Historic Districts Historic Sites with 1/2 km buffer	ME Historic Preservation Commission	This model ranks as high priority all areas listed by the ME Historic Preservation Commission as a historic site or district, sites on the National Registry, and areas with potential for Native American artifacts. National Register sites that were provided as point data were buffered by 25 feet and given a moderate priority.
	Views of Significant Landmarks	6%	Protected Lands Urban Boundary Historic Districts Large National Registered Properties National Registry - point locations High Elevation Points in Parks DEM 2004 Landcover	TPL assembled Steering Committee ME Historic Preservation Commission TPL USGS ME GIS	Identifies the center point of the 10 biggest parks in the Urban Boundary of our study area and the high point for 6 parks. Determines views from these points of scenic natural landcover and cultural areas such as historic districts, significant buildings. Scenic areas which could be seen 11-14 of the parks received a high priority (5), 8-10=4, 5-7=3, 3-4=2, 1-2=1.
	Views from the Penobscot River	22%	DEM National Hydrography Dataset 2004 Landcover Historic Districts Large National Registered Properties National Registry - point locations Study Area Boundary	USGS NHD ME GIS ME Historic Preservation Commission TPL generated	This model identifies scenic landcover and cultural areas such as historic districts, significant buildings that can be viewed from the Penobscot River. The number of spots on the river that could see any given scenic area were calculated and weighted to give a scale of 0-5, with 5 representing areas that could be seen the most number of times from the river.
	Penobscot River Corridor	22%	Water Features 2004 Landcover	ME GIS	Buffer Penobscot by 250 feet and prioritize all natural landcover within that boundary.

Criteria Weighting Rationale: Highest priority was assigned to those criteria that emphasized scenic vistas of natural areas. Landmarks and historic places (often including manmade structures) were assigned lower significance for protection.

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
Protect Working Landscapes and Waters	Working Forests	33%	Landcover 2004 Woodlot ownership 1993 JW Sewall Ownership	ME GIS ME GIS JW Sewall	This model uses landcover to extract areas with recent cuts, including classifications of Recent Clearcut, Light Partial Cut, Heavy Partial Cut, and Regenerating Forests. This data was then combined with public woodlot ownership locations. Not included were industrial and nonindustrial woodlots Includes JW Sewall large landownership data, which displays small and large industrial woodlots, current as of 2007.
	Farms and Fields	33%	Landcover 2004	ME GIS	This model identifies existing open fields and farms from landcover data.
	Potential Farmland	33%	Soils 2004 Landcover 2004	NRCS SSURGO ME GIS	This model identifies areas designated as 'All areas are prime farmland' OR 'Farmland of statewide importance' from the SSURGO soils dataset that are not currently designated as agricultural of hay/pasture on the landcover dataset. Developed areas and inappropriate areas such as wetlands were removed.

Criteria Weighting Rationale: Equal priority was assigned to all working landscape types

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
Protect Water Quality	Riparian Buffers, Wetlands and Shorelines	30%	250 foot buffer River 250 foot buffer Shoreline 250 foot buffer around ponds greater than 10 acres 150 foot buffer around all streams 250 foot buffer Wetland Public Roads Wetlands 2004 Landcover	Beginning With Habitat ME GIS ME GIS ME GIS	This model buffers riparian areas and shorelines using Beginning with Habitat (Shoreland Zoning Act) buffers: <ul style="list-style-type: none"> • 250-foot-wide strip around Great Ponds (ponds 10 acres in size and greater), rivers, the coastline, and wetlands 10 acres in size and greater • 75-foot-wide strip around streams • Landcover that overlaps with Riparian Buffer weighted in the following manner: Low Priority = Developed High Density, Low - Moderate Priority = Developed Moderate Priority, Moderate Priority = Developed Low Intensity and Bare Ground, Moderate - High Priority = Developed Open Space, Hay/Pasture and Cultivated Crops, High Priority = All Natural Landcover Types.
	Headwaters	20%	National Hydrography Dataset with Headwater Identifier Study Area	USGS National Hydrography Dataset TPL	This model creates a 75 ft buffer along headwater (first order) streams.

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
	Groundwater	25%	Significant Aquifers (glacial deposits that are a significant ground water resource)	ME GIS	This model prioritizes aquifer recharge areas. Areas where a well can get 50 plus gallons a day are rated as high priority. Areas where a well can get 10-50 gallons are rated as moderate priority.
	Wellhead Protection Areas	20%	Source Water Protection Area (SWPA) Public Water Supply Buffers that represent source water protection areas for wells that serve the public water supply.	ME GIS	In this model, wellhead protection area buffers are rated as highest priority. Source Water Protection area models are scored as: 200 day travel time to selected community public water supply well = High Priority 2500 day travel time to selected community public water supply well = Moderate Priority.
	Flood Zones	5%	Q3 Flood Data derived from the Flood Insurance Rate Maps	ME GIS	This model is based on FEMA Q3 100yr floodzones. All areas in Special Hazard Areas are rated as high priority.

Criteria Weighting Rationale: While Riparian Buffers, Shorelines, Wetlands have regulatory protection, there are deficiencies. Conservation plays a key role in protecting these critical areas. Groundwater (aquifer recharge areas), Headwaters, and Wellhead Zones were also highly weighted, since these areas have little regulatory protection. Flood zones are already federally protected. The urgency for additional protection in Flood Zones is low.

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
Establish Areas for Public Access and Recreation	Park Equity Analysis	23%	Demographic Data Protected Land	Claritas TPL assembled	This model identifies park service gaps in areas of greatest need. 1. Identifies "gaps" in current regional park system using existing park service areas 2. Identifies need based on demographic profiles (density, % children, low income households)
	Natural Areas Near Urban Areas	23%	Landcover Urban Boundary	ME GIS Steering Committee	This model seeks to identify natural areas "walkable" to urban centers. All natural areas within the Urban boundary and its 1/4 mile buffer are rated as high priority.
	Remote Spaces	7%	Landcover 2004 Maine Public Roads Study Area Raster	ME GIS ME GIS TPL	This model identifies the distance from developed landcover types for each area defined as having natural landcover. Highest priority were given to natural landcover types that were the furthest from developed areas. Developed areas outside of the 15-town study area were also considered, to appropriately identify remote areas.

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
	Community Garden Opportunities	12%	2004 Landcover	ME GIS	Identify potential agricultural land (based on SSURGO data) and bare ground that are located within 1/2 mi of developed areas.
	Wildlife Observation and Low Impact Recreation	12%	Eagle Nesting Sites Intertidal Wading Bird Habitat Tidal Wading Bird Habitat Major Wetlands Moose Crash Locations Roads State Owned Land	BwH BwH BwH BwH Stephen Engle ME GIS ME GIS	Identifies areas within 1/8 mile of major wetlands, waterfowl and wading bird habitat. These buffers along with the areas themselves are defined as wildlife viewing areas. Also identifies areas within 1/4 mile of a road, areas where these intersect are considered low impact and received a high priority score, areas further from roads are a moderate priority. The locations of moose crashes with vehicles (data provided by Maine DOT) were used to create a 1/4 mile buffer for observation of moose. Only locations that were on local or minor roads were used, all crashes on major roads and highways were not included.
	Accessible Open Space Along Waterfront	23%	Landcover 2004 Water Feature	ME GIS ME GIS	Identify natural areas within 1/8 mile of Penobscot River and major lakes. Areas identified as natural landcover = High Priority, agriculture = moderate = High Priority and Developed Open Space = Moderate Priority. Remove spaces that are not actually adjoining water feature.

Criteria Weighting Rationale: Highest conservation priority was assigned to those areas that would provide walkable and/or bikable recreation access to the greatest number of residents. Moderate priority was assigned to accessible opportunities for community gardening and wildlife viewing.

Goal	Criteria	Criteria Weights	Data (Description, Date)	Data Source	Modeling Methodology
<p>Create Trails</p>	<p>Trail Connectivity Analysis</p>	<p>100%</p>	<p>Destinations: Protected Land Easements Easements Town Centers Historic District Boat Launches Hubs: Penobscot River East Coast Greenway Connections: Rail line Proposed Bridges Existing Bridges</p>	<p>Destinations: TPL assembled Jim Gooch - TPL Orono Land Trust ME GIS ME Historic Commission ME GIS Hubs: NHD EMDC Connections: ME GIS EMDC TPL</p>	<ul style="list-style-type: none"> • Establish a trail backbone: <ul style="list-style-type: none"> • Penobscot River corridor and East Coast Greenway • Identify Impediments - Penobscot River, Interstate with bridges removed. • Identify key destinations - <ul style="list-style-type: none"> • Town centers • River access points - boat launches • Historic sites • Penjajawoc Marsh, Caribou Bog • Existing parks and open space • Identify connection opportunities (in priority order) <ul style="list-style-type: none"> • Existing Trails including Bangor City Forest, Univ Maine, Mountain Biking Trails. • Existing Bridges • Bangor Land Trust Open Space Corridor plan • Proposed trails and bridges • Utility corridors - electric and telephone lines • Railroads • Stream corridors • Undeveloped landcover • low traffic roads - Using short road connection segments when connections via undeveloped land is not available.

Appendix F

The Penobscot Valley Land Conservation Financing Research

This report supplements information provided in Chapter V of the Interim Penobscot Valley Community Greenprint Report. This supplement considers how to create local funding to support the goals and priorities that will be identified by the Penobscot Valley towns and cities in Phase II of the Greenprint. Much of this information will be further discussed and evaluated during Phase II of the Greenprint.

To begin, this report delves briefly into the Penobscot Valley communities' fiscal and political background. Next, the report analyzes possible alternatives for funding a parks and recreation land acquisition and management program, including individual communities' legal authority and revenue raising capacity. This information is followed by a summary of relevant state and federal, state funding programs that may be leveraged by the Penobscot Valley municipalities. Finally, since most revenue options

require approval by voters and/or landowners, this report provides pertinent election information, such as voter turnout history and voter reaction to Land for Maine's Future measures.

FISCAL AND POLITICAL BACKGROUND

BUDGET

The budgets of the Penobscot Valley municipalities vary in proportion to their respective populations. (See Table A.) Bangor and Old Town have the largest budgets, and Bradley and Veazie have the smallest.

DEBT

This section discusses each of the municipalities' current bonded indebtedness, debt limits, remaining debt capacity and expected near-term future bond issuance plans. Table B shows each of the municipalities' remaining debt capacity.

Table A. Summary of the Penobscot Valley Local Governments Budgets

Municipality	FY07 Municipal Revenues	FY07 Municipal Expenditures	FY08 Municipal Revenues	FY08 Municipal Expenditures
Bangor	\$85,700,000	\$82,900,000	\$88,600,000	\$85,700,000
Bradley	\$2,840,000	\$2,590,000	\$3,200,000	\$2,970,000
Brewer	\$5,140,000	\$11,000,000	\$5,130,000	\$11,300,000
Eddington*	\$2,040,000	\$1,620,000	n/a	n/a
Hampden	\$13,132,967	\$12,362,000	\$13,113,301	\$12,406,271
Hermon	\$13,600,000	\$15,200,000	\$16,900,000	\$16,900,000
Holden	\$4,240,000	\$2,000,000	\$1,340,000	\$2,110,000
Milford	\$3,540,000	\$1,630,000	n/a	n/a
Old Town	\$21,600,000	\$21,600,000	n/a	n/a
Orono	\$16,600,000	\$16,600,000	\$16,300,000	\$16,500,000
Orrington	\$8,220,000	\$8,190,000	\$8,500,000	\$8,500,000
Veazie	\$1,800,000	\$1,800,000	\$1,900,000	\$1,900,000

Sources: Respective town and city officials.

*Municipal revenues and expenditures for Eddington are for FY00 from the Town's Comprehensive Plan.

Table B. Summary of the Penobscot Valley Local Governments Remaining Debt Capacity

Municipality	Municipal Debt	Debt Limit	Remaining Capacity
Bangor	\$104,000,000	\$332,000,000	\$228,000,000
Bradley	\$394,000	\$6,390,000	\$6,000,000
Brewer	\$14,100,000	\$55,400,000	\$41,300,000
Eddington	n/a	n/a	n/a
Hampden	\$6,710,622	\$41,598,750	\$34,888,128
Hermon	\$8,880,000	\$30,000,000	\$21,200,000
Holden	\$1,150,000	\$19,500,000	\$18,300,000
Milford	\$3,980,000	\$13,500,000	\$9,470,000
Old Town	\$17,400,000	\$35,600,000	\$18,300,000
Orono	\$9,200,000	\$16,600,000	\$7,430,000
Orrington	\$4,150,000	\$24,800,000	\$20,600,000
Veazie	\$3,000,000	\$16,800,000	\$13,800,000

Sources: Respective town and city officials.

BANGOR

The City of Bangor generally issues bonds on an annual basis.⁹⁷ The city’s current debt is \$104 million, with a limit of \$332 million. Recently, much of this borrowing has been related to a combined sewer overflow control program. The city anticipates there may be a major debt issuance for a new arena/meeting facility within the next five years or so. This is potentially in the \$60 million to \$80 million range. The goal is that the city’s revenues from the slot operation would support the arena/meeting facility, but it is unknown whether this can fully support the debt service. A borrowing of this magnitude will have the practical effect of making Bangor more cautious about issuing other debt.

BRADLEY

The Town of Bradley’s current bonded indebtedness is \$394,000.⁹⁸ The debt limit set by state statute is \$6.39 million; therefore, the remaining debt capacity is \$6 million.⁹⁹ The last bond was issued in 2000 but the Town anticipates it will issue a new bond within the next year for a new fire station.

BREWER

The City of Brewer’s outstanding bonded indebtedness is \$14.1 million, and its debt limit is \$55.4 million. Brewer typically issues one or more bonds each year

to fund capital projects in its general fund, sewer fund and/or water funds.¹⁰⁰ These bonds range in size from \$600,000 to as much as \$5 million in any given year. Brewer expects to issue a \$7 million bond for the financing of the fiscal year 2008 capital improvement program, which includes the design and construction of a new public safety facility.

Brewer plans to build a new K-8 school starting this year, however, the approximately \$42 million in financing for this will be raised by the Brewer High School District Trustees, a wholly separate financial entity from the City. Most of the \$42 million cost will be paid by the State of Maine. Debt service on approximately \$2 million of the total (funding for the auditorium portion of the building) will ultimately be the responsibility of the taxpayers of Brewer.

EDDINGTON

Eddington’s outstanding and remaining debt capacity is not available at this time.

HAMPDEN

Hampden’s outstanding bonds include money used to rebuild and pave 11 gravel roads, rebuild Maine Road North and Westbrook Terrace sewer lines, and build the Public Safety addition to the Municipal Building.

⁹⁷ Written communication from Ed Barrett, Bangor City Manager, May 8, 2008.

⁹⁸ Written communication from Melissa Doane, Bradley Town Manager, May 9, 2008.

⁹⁹ No municipality may incur debt for purposes other than schools, storm or sanitary sewers, energy facilities, or municipal airports greater than 7.5 percent of its last full state valuation. In addition, no municipality may incur debt which would cause its total debt outstanding at any time to exceed 15 percent of its last full state valuation. MRS Title 30-A, Chapter 223, Section 5702.

¹⁰⁰ Written communication from Ken Hanscom, Director of Parks and Recreation, City of Brewer, May 12, 2008.

Future bond projects include additional sewer renovation and rebuilding Mayo Road.

HERMON

The Town of Hermon has not issued a bond in three years.¹⁰¹ Hermon's current bonded indebtedness is \$8.88 million, below its limit of \$30.0 million. It is currently considering a couple of bonds but there are no firm plans and it will probably be at least two years before a new bond is attempted.

HOLDEN

The Town of Holden has not issued a bond in seven years.¹⁰² Holden's current bonded indebtedness is \$1.15 million, below its limit of \$19.5 million. Holden does not anticipate issuing a bond within the next year and no other major capital projects are planned.

MILFORD

The Town of Milford's current bonded debt is \$3.98 million.¹⁰³ The debt limit set by state statute is \$13.5 million; therefore, the remaining debt capacity is \$9.47 million.¹⁰⁴ The town has capital leasing plans for the future, no bonding is currently being considered.

OLD TOWN

Old Town's city, pollution control, and school debt is \$17.4 million.¹⁰⁵ The debt limit set by state statute is \$35.6 million; therefore, the remaining debt capacity is \$18.3 million.¹⁰⁶ The city plans on issuing a bond for \$1.30 million in FY08-09 for city hall and other building improvements, another \$2 million will be issued in the same period for school building improvements.



A stream running through Hampden, by Jeff Kirlin.

ORONO

The Town of Orono has a current bonded indebtedness of \$9.2 million.¹⁰⁷ Orono limits its debt to four percent of assessed value, or \$16.6 million. Orono's high level of debt is due to its guarantee of an economic development project that defaulted several years ago. The Town, through its economic development organization, as a guarantor must pay the obligation. No additional bonding is being considered.

ORRINGTON

The current town debt for Orrington is \$4.15 million, with a limit of \$24.8 million. Almost the entire amount of current Town debt is a school construction loan.¹⁰⁸ Orrington plans to pay off the other loan for the North Orrington sewer project (\$112,000) in full in July 2008.

VEAZIE

The Town of Veazie's current bonded indebtedness is \$3.0 million.¹⁰⁹ Veazie's bond debt limit is \$16.8 million. No future bonds are currently planned.

¹⁰¹ Written communication from Clint Deschene, Hermon Town Manager, May 28, 2008.

¹⁰² Written communication from Steve Condon, Community Development Director, Town of Holden, May 13, 2008.

¹⁰³ Written communication from Barbara Cox, Milford Town Manager, May 9, 2008.

¹⁰⁴ MRS Title 30-A, Chapter 223, Section 5702.

¹⁰⁵ Written communication from Peggy Daigle, Old Town City Manager, June 4, 2008.

¹⁰⁶ MRS Title 30-A, Chapter 223, Section 5702.

¹⁰⁷ Written communication from Evan Richert, Orono Planning Department May 14, 2008.

¹⁰⁸ Written communication from Carl Young, Orrington Town Manager, May 5, 2008.

¹⁰⁹ Written communication from Bill Reed, Veazie Town Manager, May 16, 2008.

LOCAL FINANCE RESOURCE OPTIONS

The following section of this report provides an overview of the finance resource options available to municipalities in Maine.

In Maine, state law limits dedicated funding options for land conservation available to local government to a few key sources, primarily bonds, development impact fees, and tax increment financing (TIF), where the use of the proceeds are directly related to insuring development can continue to take place. Local governments are precluded by the state from levying a real estate transfer tax, sales tax, or income tax for open space land acquisition. Other smaller revenue sources exist, such as donations, bequests, and user fees, but are not examined here.

BONDS

To raise funds for capital improvements, such as land acquisition or building construction, Maine towns and cities may issue bonds. There are two types of bonds: general obligation (GO) bonds and revenue bonds. GO bonds are essentially loans taken out by a government secured by the jurisdiction's full faith, credit, and taxing power. A revenue bond is a municipal bond whose debt service is payable solely from the revenues derived from operating the facilities acquired or constructed with the proceeds of the bonds. Municipalities can issue revenue bonds not exceeding the total tax levy of the preceding two years.¹¹⁰

Borrowing by issuing bonds presents a number of advantages. Borrowing can provide the community with the revenue and flexibility it needs up front to fund large-scale park and open space projects when land is available and less expensive than it will be in the future. Bonds insure a steady stream of funding that is not dependent on the fluctuations of the operating budget. Costs are typically spread out over a long time horizon and, therefore, are borne by both current and future beneficiaries. GO bonds are a popular open space financing tool at local levels across the county.



Fiddlehead ferns in the Penobscot Valley, by Jeff Kirlin.

On the other hand, financing charges accrue, debt ceilings limit the amount of bonds a state or community can issue, and convincing voters of the merits of incurring debt can be challenging. There is generally stiff competition for GO bonds among many programs. Finally, municipalities must be mindful of how continued increases in debt will affect its bond ratings, as ratings can influence the interest rate charged on the loans.

In general, Maine municipalities are organized in one of two forms of government: the direct, town meeting form of government where the legislative body of the community is the town meeting, or the representational form of government where the legislative body of the community is the town or city council.¹¹¹ Each municipality can specify the procedural requirements for issuing debt. Table C identifies how each Penobscot Valley municipality would authorize issuing a bond.

Table D illustrates the estimated bond amount each community could issue at an annual cost of \$30 to the average homeowner.

¹¹⁰ M.S.A., §5771

¹¹¹ Maine Municipal Association. <http://www.memun.org>

Table C. Requirements for Issuing a Bond by the Penobscot Valley Municipalities

Municipality	Approval Mechanism	Requirement	Annual Meeting
Bangor	City Council	Two thirds	n/a
Bradley	Town Referendum	Majority	n/a
Brewer	City Council	Majority	n/a
Eddington	Town Meeting	Majority	March
Hampden	Town Election	Majority	November
Hermon	Town Meeting with an Ordinance	Majority	Called by Town Council
Holden	Town Meeting	Majority	June
Milford	Town Meeting	Majority	June
Old Town	City Council	Majority	n/a
Orono	Town Council	Majority	March
Orrington	Town Meeting	Majority	June
Veazie	Council approval then a community ballot	Majority	n/a

Table D. The Penobscot Valley Bond Financing Costs

Assumes 20-year bond at 5.0% interest rate.

Municipality	Taxable Valuation 2008	Median Home Value	Cost/ Year/ Avg. Home	Annual Debt Service	Bond Issue
Bangor	\$2,360,000,000	\$139,000	\$30	\$509,000	\$6,340,000
Bradley	\$85,300,000	\$177,000	\$30	\$14,500	\$180,000
Brewer	\$739,000,000	\$157,000	\$30	\$141,000	\$1,760,000
Eddington	\$141,000,000	\$130,000	\$30	\$32,400	\$404,000
Hampden	\$555,000,000	\$174,000	\$30	\$95,600	\$1,190,000
Hermon	\$401,000,000	\$179,000	\$30	\$67,100	\$837,000
Holden	\$253,000,000	\$210,000	\$30	\$36,100	\$450,000
Milford	\$179,000,000	\$117,000	\$30	\$45,900	\$572,000
Old Town	\$475,000,000	\$123,000	\$30	\$116,000	\$1,450,000
Orono	\$416,000,000	\$184,000	\$30	\$67,800	\$845,000
Orrington	\$331,000,000	\$166,000	\$30	\$59,800	\$745,000
Veazie	\$223,000,000	\$157,000	\$30	\$42,800	\$534,000

Sources: Maine Revenue Service. State Valuation History 1999 – 2008.

Available at http://www.maine.gov/revenue/propertytax/state_valuation/state_valuation_history.htm.

Maine State Housing Authority. Bangor Labor Market Area Homeownership Facts 2006.

Available at <http://www.mainehousing.org/DATAHousingFacts.aspx>.

IMPACT FEES

In 1987, the Maine Legislature authorized local governments to impose impact fees on new development for the purpose of financing facility improvements, including parks and open space, due to demand caused by new growth. The first step for a community considering implementing an impact fee is to assess its rate of growth and determine if it would generate enough revenue to make the effort of developing an ordinance and its administration worthwhile.¹¹² As discussed above, the rate of population growth from 2000 to 2006 in the Penobscot Valley communities is highly variable, with rates ranging from negative 2.1 percent to 16.1 percent.¹¹³

The next step is to identify the current level of service (e.g. 25 acres of park for every 1,000 residents) provided in order to determine the need for future

parks and open space and the extent to which new development contributes to that need. It is important to remember that impact fees cannot be used to finance existing deficiencies; therefore, an impact fee can only be used in a community with increasing population, and for providing open space to those new residents.

To give a sense of the magnitude of revenues that could be generated by impact fees this report multiplies the average rate of annual housing starts by the average number of persons per household in each municipality. For purposes of illustration, the impact fee per person is assumed to be \$150 based on the Town of Brunswick and the City of Saco's open space impact fees of \$127 and \$156, respectively.¹¹⁴ Table E provides the estimated annual open space impact fee revenues.¹¹⁵

Table E. The Penobscot Valley Open Space Impact Fee Revenues

Municipality	Impact Fee for New Development	Impact Fee for Open Space	Annual Housing Starts	Persons per Household	Approx. Impact Fee Revenue @ \$150
Bangor	Yes	No	38	2.12	\$12,100
Bradley	No	No	15	2.42	\$5,450
Brewer	Yes	No	26	2.30	\$8,970
Eddington	No	No	n/a	2.46	n/a
Hampden	No	No	n/a	2.60	n/a
Hermon	No	No	50	2.66	\$20,000
Holden	Yes	No	25	2.45	\$9,190
Milford	Updating subdivision ordinance to allow for impact fees		10	2.50	\$3,750
Old Town	No	No	18	2.30	\$6,210
Orono	Yes	No	12	2.23	\$3,850
Orrington	Yes	No	25	2.52	\$9,450
Veazie	Yes	No	10	2.41	\$3,620

¹¹² Maine State Planning Office, Financing Infrastructure Improvements Through Impact Fees: A Manual for Maine Municipalities on the Design and Calculation of Development Impact Fees, January 2003.

¹¹³ While impact fees are tied to new development, as opposed to population growth, for purposes of anticipating possible revenue, in the absence of good projections for new development across the study area, anticipated population growth is used as a rough indicator for projected new development.

¹¹⁴ Town of Brunswick Open Space Impact Fee Methodology. The Town of Brunswick and the City of Saco are the only known towns in Maine that have implemented an impact fee specifically for open space at the time of this publication. \$150 was chosen because it is a round number that falls between these two existing fees.

¹¹⁵ For municipalities wishing to explore impact fees in more depth the Maine State Planning Office has an open space impact fee calculator for municipalities. The worksheet can be accessed at <http://maine.gov/spo/landuse/docs/compplanning/openspace.xls>.

TAX INCREMENT FINANCING

Some cities have used tax increment financing (TIF) as a major source of park acquisition and improvement funds. TIF diverts increases in property tax revenue within a set geographic area for specified purposes. Chicago's Millennium Park relies in part on revenues from the Central Loop TIF, and Portland, Oregon used TIF for Pioneer Courthouse Square and Jamison Square. In the city's Pearl District, a new densely populated central neighborhood built near the Willamette River on a former railroad area, nearly \$23 million has been used to build three parks totaling 4.9 acres and renovate another acre of existing parkland.

In Maine, a municipality may participate in local project financing by using some or all of the new property taxes from a capital investment within a designated geographic district.¹¹⁶ The municipality has the option of using the "incremental" taxes to retire bonds it has issued for the project, compensate a developer or business for development project costs, or fund eligible municipal economic development activities. TIF districts may be designated for up to 30 years and bonds may be issued for up to 20 years. The designation of a TIF district requires proper notice, a local public hearing, the majority vote of the municipal legislative body, and state approval.

In Bangor, a TIF has been created for new commercial development in the area designated for commercial development near the Penjajawoc Marsh and Stream and located to the north and west of Stillwater Avenue and to the west of Kittredge Road.¹¹⁷ The City will set aside 25 percent of the new taxes from commercial development within the district for open space that protects or enhances water quality starting at the end of 2008, and continue to do so for 10 years.¹¹⁸ The TIF is expected to generate revenues in the range of \$1.0 million, plus or minus 20 percent, over the next 15 to 20 years.¹¹⁹ These funds will be used to purchase property or conservation easements, public access projects and water quality improvement efforts.¹²⁰ Property and easements will only be acquired from willing sellers.

Communities wishing to utilize TIF financing for open space or resource protection purposes must be careful

to insure that funded projects are directly related to allowing current or future development in the area and are cautioned to work closely with legal advisors or the State Department of Economic and Community Development to insure that a TIF proposal meets State requirements.

STATE FUNDING PROGRAMS

- **Land for Maine's Future (LMF)**

State Planning Office
<http://maine.gov/spo/lmf/>

The LMF program began in 1987 and uses money through voter approved bond authorizations to acquire land, a total of \$117 million over 20 years. The program focuses on acquiring land for open space, wildlife, parks, natural areas, endangered species habitat, and natural communities. The LMF Program has successfully leveraged funds from other sources, including private and federal dollars. Key funding partners have included nonprofit organizations, foundations, cooperating landowners, and federal agencies.

LMF requires at least a one-third match of private funds for the public funds expended, and has successfully leveraged more than \$126 million from other sources, including private and federal dollars. Since its creation, LMF has assisted in the acquisition of more than 490,000 acres, including 247,000 acres protected through conservation easements. The lands protected through the LMF include more than 1,000 miles of shorefront and 158 miles of rail-trails as well as valuable wildlife habitat, entire islands, and working forests and farms.

- **Maine Outdoor Heritage Fund**

Department of Inland Fisheries and Wildlife
<http://www.state.me.us/ifw/grants/outdoorheritagefund/index.htm>

The Maine Outdoor Heritage Fund is supported by 26 percent of the total proceeds from "scratch-off" lottery tickets. Funds are allocated to habitat conservation, land acquisition, and endangered species projects. Grants are awarded twice each

¹¹⁶ Maine Department of Economic and Community Development, Municipal Tax Increment Financing, May 1, 2005.

¹¹⁷ City of Bangor Code of Ordinances, Article IV Section 23-34.

¹¹⁸ Penjajawoc Marsh Bangor Mall Management Commission, Marsh/Mall Overlay Zone Management Plan, November, 2007.

¹¹⁹ Written communication from Ed Barrett, Bangor City Manager, on May 8, 2008.

¹²⁰ Penjajawoc Marsh Bangor Mall Management Commission, Marsh/Mall Overlay Zone Management Plan, November, 2007.

year by a seven-member board that is appointed by the Governor. Grants are awarded based on a point system. Local governments or municipalities receive a higher score if there is a one-third or higher cash or in-kind match from non-governmental sources.

The proceeds from ticket sales total approximately \$700,000 annually. The Maine Outdoor Heritage Fund Board awards grants to projects in four categories that promote recreation as well as land conservation. A monetary match is required and must consist of funds raised specifically for the project proposed and does not include salary costs of natural resource agency staff. A cash or in-kind match of one-third or more of the total project cost is required from nongovernmental sources.

- **Endangered and Nongame Wildlife Fund**

Maine's Endangered and Nongame Wildlife Fund was created by the legislature in 1983. Contributions are made through a "chicadee check-off" on the state income tax form and through the sale of a "loon license plate." All donations are deposited into a special interest-bearing account. Money from this fund can only be spent on the conservation of Maine's endangered and nongame species

- **Drinking Water Land Acquisition Loan Program**

The funds allocated for land acquisition loans will be used to give the highest priority community and non-profit, non-community water systems' loans for the purchase of land and/or conservation easements needed for source water protection.¹²¹ The Drinking Water Program (DWP) believes that a water system's ownership or legal control of the land around its source(s) is the most effective means of protecting its source(s). For this reason, the DWP intends to provide enough funds in the land acquisition set-aside account to meet all requests for the 2007 Drinking Water State Revolving Fund Grant period. Water systems may apply at anytime, however, it is strongly recommended requests be submitted so the DWP can determine the amount of funds to this set-aside. If more requests for money are received than is allocated for the land acquisition set-aside the

priority ranking in the 2007 Intended Use Plan will be implemented.

FEDERAL FUNDING PROGRAMS

All the programs discussed under this section are administered by federal agencies but vary in how funds are delivered for on the ground projects. For example, some of these program funds are directed to the states, who in turn decide what projects to fund, while other program funds are granted by a federal agency through a competitive process. In still other cases, Congress may "earmark" funds for individual projects. The descriptions provided below are meant to provide a broad overview of funding sources. TPL can provide additional information on program rules and accessibility.

- **Federal Aid in Sport Fish Restoration: US Fish and Wildlife Service**

<http://federalasst.fws.gov/sfr/fasfr.html>

The Federal Aid in Sport Fish Restoration Act, commonly referred to as the Dingell-Johnson Act, was passed in 1950, to create a program for the management, conservation, and restoration of fishery resources. The program is funded by revenues collected from an excise tax paid by the manufacturers of fishing equipment. Appropriate state agencies are the only entities eligible to receive these grants and funds are apportioned to each state on a formula based on the percentage of licensed anglers in the state and the percentage of states' land and water area.

The program is a cost-reimbursement program, where the state covers the full amount of an approved project then applies for reimbursement through Federal Aid for up to 75 percent of the project expenses. The state must provide at least 25 percent of the project costs from a non-federal source. In FY07 and FY08, Maine received slightly over \$5.3 million in funding through this program.

- **Federal Aid in Wildlife Restoration (Pittman-Robertson Act)**

U.S. Fish and Wildlife Service

<http://federalasst.fws.gov/wr/fawwr.html>

Implemented in 1938, the Federal Aid in Wildlife Restoration Act, or more commonly known as the Pittman-Robertson Act, provides funding from

¹²¹ Maine Drinking Water Program.



Kayaking in the Kenduskeag Stream in the Penobscot Valley, by Jeff Kirlin.

the Department of the Interior for the selection, restoration, rehabilitation, and improvement of wildlife habitat, wildlife management research, and the distribution of information produced by the projects. Funds are derived from an 11 percent excise tax on sporting arms, ammunition, and archery equipment and a 10 percent tax on handguns. Funds are apportioned to appropriate state agencies on a formula based on the total area of the state and the number of licensed hunters in the state.

The program is a cost-reimbursement program in which the state applies for repayment of up to 75 percent of approved project expenses. The state must provide at least 25 percent of the project costs from non-federal sources. In FY07 and FY08, Maine received around almost \$7.5 million in funding through this program.

- **Migratory Bird Conservation Fund**

U.S. Fish and Wildlife Service (USFWS)

<http://www.fws.gov/realty/mbcc.html>

Each year, duck stamp (migratory bird and conservation stamps) revenues are deposited into the Migratory Bird Conservation Fund along with appropriations from the Wetlands Loan Act of 1961, import duties from arms and ammunitions, receipts from refuge admission fees, receipts from the sale of refuge-land crops and refuge rights-of-way, and Federal Aid funds. Administered by the USFWS, the Migratory Bird Conservation Fund is used to acquire waterfowl breeding, wintering, and migration habitat needed for maintaining optimum migratory bird population levels and to achieve desirable migration and distribution patterns.

The habitat areas, acquired in fee, easement, or other interests such as leases or cooperative agreements, become units of the National Wildlife Refuge System or Waterfowl Production Areas. The USFWS focuses its acquisition efforts to benefit waterfowl species most in need of habitat protection. Over 4 million acres have been protected with funds from the Migratory Bird Conservation Fund.

- **The North American Wetlands Conservation Act (NAWCA)**

U.S. Fish and Wildlife Service

<http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm>

The NAWCA was passed in 1989 to provide matching grants for the acquisition, restoration, and enhancement of wetland ecosystems for the benefit of waterfowl and other wetland dependent migratory species. Administered by the USFWS, grants are available to nonprofit organizations, state and local agencies, tribes, and private individuals in the U.S., Canada, and Mexico. Two types of grants are awarded; small grants for up to \$75,000 and standard grants for up to \$1 million. There is a 1:1 non-federal match requirement for each grant although the average match of successful proposals is over 2:1.

In December 2002, Congress reauthorized the Act and expanded its scope to include the conservation of all habitats and birds associated with wetlands ecosystems. Congress also increased the appropriation authorization of the grant program to \$55 million for FY03, with \$5 million increases to occur annually until FY07, when the appropriation cap will be \$75 million. The Congressional appropriation to fund the grant program in FY08 is approximately \$40.3 million. Additional program funding is expected to bring the total funding available to approximately \$84.4 million in FY08.

Since 1990, over 3,500 partners have been involved in over 1,650 NAWCA standard and small grant projects, affecting 23.8 million acres of wetlands and associated uplands across the continent. In FY04, \$1 million was awarded for fee and easement acquisition within Washington and Penobscot Counties for the Downeast Lakes Forestry Partnership through this program.

- **State Wildlife Grants**

U.S. Fish and Wildlife Service

<http://wsfrprograms.fws.gov/Subpages/GrantPrograms/SWG/SWG.htm>

Created by Congress in 2001, the State Wildlife Grants Program is a matching grant program available to every state in support of cost-effective, on-the-ground conservation efforts aimed at restoring or maintaining populations of native species before listing under the Endangered Species Act is required. In order to maximize the effectiveness of this program, Congress required each state to develop a comprehensive wildlife conservation strategy for the conservation of the state's full array of wildlife and the habitats they depend upon. These plans identify species and habitats of greatest conservation need and outline the steps necessary to keep them from becoming endangered. The State Wildlife Grants Program provides matching funds that are to be used to implement the conservation recommendations outlined in these state wildlife action plans.

Funds appropriated under the State Wildlife Grants Program are allocated to every state according to a formula based on a state size and population. Since its inception in 2001, Maine has received slightly over \$4.8 million in matching funds from this program.

- **National Fish and Wildlife Foundation-Keystone Initiative Grants & Special Grants Programs**

National Fish and Wildlife Foundation (NFWF)

<http://www.nfwf.org/programs.cfm>

In 1984, Congress created the NFWF to benefit the conservation of fish, wildlife, plants, and the habitat on which they depend by attracting diverse investments to conservation and encouraging locally supported stewardship on private and public lands. Through their Keystone Initiatives Grant Program, NFWF funds projects to conserve and restore bird, fish, and wildlife populations as well as the habitats on which they depend. The NFWF awards matching grants to projects that address priority actions laid out by their strategic plan, work proactively to involve other conservation and community interests, leverage funding, serve multiple objectives, involve strong partnerships, and fit into a larger ecosystem approach to conservation. The most successful applications will display the long-term environmental benefits of a project that yield high quality conservation returns. Eligible grantees include federal, tribal, state, and local governments, educational institutions, and non-profit conservation organizations. Grants can range from \$50,000 to \$300,000 and typically require a 2:1 nonfederal match.



Fishing in Veazie, by Jeff Kirlin.

In addition to the Keystone Initiative matching grants, the NFWF administers a variety of special grant programs with specific conservation objectives, programmatic guidelines, and timelines. (See the Foundation's website for more information on these numerous grant opportunities or call NFWF's Eastern Partnership Office at (202) 857-0166.

- **Land and Water Conservation Fund (LWCF)**

Department of the Interior (varies by agency)

<http://www.nps.gov/ncrc/programs/lwcf/>

Created in 1965, the LWCF is the largest source of federal money for park, wildlife, and open space land acquisition. Specifically, the LWCF provides funding to assist in acquiring, preserving, developing, and assuring accessibility to outdoor recreation resources, including but not limited to open space, parks, trails, wildlife lands and other lands and facilities desirable for individual active participation. The program's funding comes primarily from offshore oil and gas drilling receipts, with an authorized expenditure of \$900 million each year, while federal recreation fees, sales of federal surplus real property, and federal motorboat fuel taxes fund also contribute to the LWCF. Under this program, a portion of the money is intended to go to federal land purchases and a portion to the states as matching grants for land protection projects.

- **LWCF – Federal**

Department of the Interior

U.S. Forest Service

The federal side of the LWCF provides funding for federal agencies (Fish and Wildlife Service, Forest Service, National Park Service, and the Bureau of Land Management) to add land to existing recreation areas, parks, forests, refuges and other federal units. LWCF funding provides the bulk of the money available for this purpose and is typically provided through the annual federal appropriations process, with Congress making the determination of what federal land units will receive LWCF funding each year.

The Sunhaze Meadows National Wildlife Refuge in Milford is an example of a federal land unit in Maine eligible for LWCF acquisition funding. Another nearby example is Acadia National Park on Mt. Desert Island.

- **LWCF--Stateside**

National Park Service

http://www.nps.gov/ncrc/programs/lwcf/fed_state.html

<http://www.maine.gov/doc/parks/programs/community/lwgrants.html>

The stateside LWCF program provides a 50 percent match to states for planning, developing, and acquiring land and water areas for natural resource protection and recreation enhancement.

Funds are distributed to states based on population and need. Once the funds are distributed to the states, it is up to each state to choose the projects, though the National Park Service has final approval. Eligible grant recipients include municipal subdivisions, state agencies and tribal governments, each of whom must provide at least 50 percent matching funds in either cash or in-kind contributions and a detailed plan for the proposed project. Grant applications are evaluated based on the technical merits of the project, the public/private partnerships, and how the project addresses the identified needs and priorities of a statewide Comprehensive Plan. Annual appropriations to the fund have ranged from a high of \$369 million in 1979 to four years of zero funding between 1996 and 1999.

In FY07, \$27.9 million was provided for stateside grants. In FY07, Maine received \$276,000 from the state grant portion of the LWCF. The Department of Conservation's Bureau of Parks and Lands administer the program in the state. In the past, several boat access points, local parks, and tennis courts in several communities in Penobscot County have been developed using LWCF state grants.

- **U.S. Army Corps of Engineers Civil Works Programs**

Department of Defense

The U.S. Army Corps of Engineers (Corps) has both military and civilian responsibilities. Under its civil works program, the Corps plans, constructs, operates, and maintains a wide range of water projects, headed by a civilian Assistant Secretary of the Army for Civil Works. A military Chief of Engineers oversees the Corps' civil and military operations and reports on civil works matters to the Assistant Secretary for Civil Works. Projects

generally originate with a request for assistance from a community or local government entity. A study of the project is often in order, allowing the Corps to investigate a problem and determine if there is a federal interest in proceeding further. The study must be authorized by Congress, usually in the biennial Water Resources Development Act (WRDA), and must be funded through the annual Energy and Water Appropriations bill.

Congress also provides authorizations and appropriations to the Corps for the Continuing Authorities Programs. Two programs, Section 1135 and Section 206 are of special interest. Section 1135 provides authority for the Corps to investigate, study, modify, and construct projects for the restoration of fish and wildlife habitats where degradation is attributable to water resource projects previously constructed by the Corps. Project modifications are limited to a federal cost of \$5 million per project. The program limit for Section 1135 is \$25 million.

Aquatic Ecosystem Restoration (WRDA Section 206) provides authority for the Corps to carry out aquatic ecosystem restoration and protection projects if the project will improve the quality of the environment, is in the public interest, and is cost effective. Each project is limited to a federal cost of \$5,000,000. The total program limit is \$25 million.

- **Recreational Trails Grants Program**

US Department of Transportation
<http://www.fhwa.dot.gov/environment/rectrails/index.htm>
<http://www.maine.gov/doc/parks/programs/community/trailsfund.html>

The Recreation Trails Program is a federal transportation program that provides monies for the maintenance, development, acquisition, and construction of new and existing trail facilities for both motorized and nonmotorized recreational trail uses. Funds are distributed to the states according to a formula. Eligible applicants include nonprofit organizations, municipal agencies, state agencies, federal government agencies, and other government entities (regional governments, port districts, etc.). Eligible projects include:

- maintenance and restoration of existing trails,

- development and rehabilitation of existing trails,
- construction of new recreation trails, and
- acquisition of easements and fee simple title to property.

Grants are distributed annually and require a twenty percent match. In FY08, Maine is receiving \$1.15 million for this program, which is administered by Maine's Department of Conservation Bureau of Parks and Lands. Funds from this program have been used in the past for trails and improvements in Bangor, Orono, and Corinna.

- **Transportation Enhancements**

US Department of Transportation
www.enhancements.org
<http://www.maine.gov/mdot/community-programs/enhancement-program.php>

The federal Surface Transportation Program provides states with funding for highway projects. States are allocated funds based on a combination of population, transportation systems, miles of roads, and other factors. Each state must reserve at least 10 percent of its Surface Transportation Program dollars for transportation enhancement activities. These enhancement projects include historic preservation, rails-to-trails programs, easement and land acquisition, transportation museums, water pollution mitigation, wildlife connectivity, and scenic beautification. All projects must be related, in some way, to transportation.

In each state, Transportation Enhancement projects are selected through a competitive process. Applications are submitted by local government entities, often in partnership with nonprofit organizations. The federal government provides 80 percent of the funds and the municipalities need to contribute a 20-percent match.

In Maine, applications are reviewed, ranked, and prioritized within three broad categories: Bicycle/Pedestrian, Scenic/Landscape/Historic, and Environmental. Metropolitan Planning Organizations (MPOs) provide input but are not directly involved in the selection process. The Maine Department of Transportation makes

awards every two years. There are no maximum or minimum awards. The federal government gives final approval to the projects and distributes the funds directly to the municipalities or nonprofits on a reimbursement basis. Numerous Transportation Enhancement grants have been made in Penobscot County for bicycle and pedestrian facilities, preservation of abandoned rail corridors, and environmental mitigation/wildlife corridors. In 2006, Maine's apportionment for Transportation Enhancements was \$3.43 million. The program emphasizes enhancements in connection with Maine DOT's Explore Maine, pedestrian and bicycle, environmental mitigation, and downtown revitalization initiatives.

- **Coastal and Estuarine Land Conservation Program (CELCP)**

National Oceanic and Atmospheric Administration (NOAA)

<http://coastalmanagement.noaa.gov/land/welcome.html>

CELCP funds pass-through grants to states and local governments for fee or easement acquisition in a state's coastal zone, and/or as provided for in a state's coastal conservation plan. CELCP was created in order to "protect those coastal and estuarine areas with significant conservation, recreation, ecological, historical or aesthetic values, or those that are threatened by conversion from their natural state to other uses," and lands purchased through this program must generally be maintained or restored to their natural state. Public access is general requirement, and the program requires a 1:1 non-federal match, which can be in many forms, including restoration and land value donation. CELCP is administered through NOAA. The funding and project selection process begins with each participating state soliciting project proposals, and picking no more than three to submit to the national process. NOAA will then create a national ranking, with the top projects receiving funding via the annual appropriations process.

CELCP was funded at approximately \$8 million in FY08, \$21 million in FY07 and \$39 million in FY06. Five CELCP projects have thus been funded in Maine, including the TPL-sponsored Maquoit Bay project, which was nationally top-ranked in FY07, the first year NOAA conducted the national competition.

- **Brownfields Program**

U.S. Environmental Protection Agency (EPA)

<http://www.epa.gov/brownfields/applicat.htm>

If a property identified for acquisition or redevelopment is or might be a "brownfields" site, many programs and other benefits at the local, state and federal levels encourage its redevelopment. The EPA's Brownfields Program provides direct funding for brownfields assessment, cleanup, revolving loans, and environmental job training. In addition, legislation signed into law in 2001 limits the liability of certain contiguous property owners and prospective purchasers of brownfields properties and innocent landowner are also afforded liability benefits to encourage revitalization and reuse of brownfield sites. EPA's brownfields program provides several types of grants:

- Assessment Grants provide funding for a grant recipient to inventory, characterize, assess, and conduct cleanup and redevelopment planning and community involvement related to brownfield sites. Grants can be up to \$200,000, or to \$350,000 with a waiver.
- Remediation grants are available for remediation of brownfield sites. These grants are limited to \$200,000 per site, with no more than three applications per entity. There is a 20 percent cost-share. Non-governmental organizations are eligible to apply, but must have site control of the property. One site may qualify for two grants if pollutants include petroleum and non-petroleum contaminants.
- Revolving Loan Fund grants provide funding for a grant recipient to capitalize a revolving loan fund to provide sub grants to carry out cleanup activities at brownfields sites of up to \$1 million per eligible entity, with a 20 percent cost share.
- Annual grants are announced in approximately October of each calendar year. In a regional example of this funding, TPL received an EPA brownfields grant to assist in the capping of a landfill in Providence, Rhode Island on a 1.5-acre property that is now part of the Woonasquatucket River Greenway.

- **Urban Park and Recreation Recovery Program (UPARR)**

National Park Service
<http://www.nps.gov/uprr/>

UPARR was developed as the urban component to the LWCF in 1978. UPARR grants are given to eligible cities and counties and are meant to assist disadvantaged areas. The grants fund rehabilitation (capital funding for renovation or redesign of existing facilities), innovation (funding aimed to support specific activities that either increase recreation programs or improve the efficiency of the local government to operate recreation programs), and planning (funding for development of recovery action program plans) for recreational services in urban areas. From the program's inception in 1978 to 2002, it has distributed approximately \$272 million for 1,461 grants to local jurisdictions in 43 states, the District of Columbia and Puerto Rico. A local match of at least 30 percent is required for most grants. This program, however, has not been funded for the past six fiscal years.

- **Clean Water and Drinking Water State Revolving Funds (SRFs)**

The EPA is charged with implementing both the Clean Water Act and the Safe Drinking Water Act, two landmark pieces of legislation whose respective goals are to clean up America's waterways and to ensure that we have safe water to drink. Conservation is an eligible activity under both laws. Both programs utilize SRFs to fund projects that better water quality and enhance our drinking water supplies. Every year, Congress appropriates funds that are portioned out to the states on a formula basis to fund the SRFs.

- **Clean Water State Revolving Fund (CWSRF)**

<http://www.epa.gov/OWM/cwf/finance/cwsrf/index.htm>

Through the CWSRF program, each state maintains a revolving loan fund to provide a source of low-cost financing for a wide range of water quality infrastructure projects. In FY07, Congress appropriated \$1.08 billion for the CWSRF, distributed among the states. Federal funds must be matched by 20 percent non-federal funds.

The CWSRF program is available to fund a wide variety of water quality projects including all types of nonpoint source, watershed protection, or restoration, and estuary management projects, as well as more traditional municipal wastewater treatment projects. Nationwide, 95 percent of these funds go toward infrastructure projects, but watershed protection projects are increasing. CWSRF programs operate much like environmental infrastructure banks that are capitalized with federal and state contributions.

CWSRF monies are loaned to communities and loan repayments are recycled back into the program to fund additional water quality protection projects. The revolving nature of these programs provides for an ongoing funding source that will last far into the future.

States have the flexibility to target resources to their particular environmental needs, including contaminated runoff from urban and agricultural areas, wetlands restoration, groundwater protection, brownfields remediation, estuary management, and wastewater treatment. Land or easement acquisition is permitted with CWSRF funds as a method to reduce nonpoint source pollution. For example, California has already used \$112 million of its CWSRF funds to acquire over 29,000 acres of land for water quality benefits. Maine's FY07 allotment was \$ 8.37 million.

- **Drinking Water State Revolving Fund (DWSRF)**

<http://www.epa.gov/safewater/dwsrf/index.html>

The DWSRF program was established by the 1996 Safe Drinking Water Act Amendments, under which EPA provides grants to states to establish revolving loan funds from which they provide loans and other types of financial assistance to public water systems for eligible infrastructure improvements. Since its inception, Congress has directed \$4.2 billion for the DWSRFs. In FY07, states were awarded \$823 million towards their DWSRFs. Conservation easements and fee simple acquisitions are permitted with these funds.

Since its inception, only \$2.7 million has been for acquisition to protect less than 2,000 acres of land under the DWSRF. However, EPA has

begun a concerted effort to focus more attention on protecting “source water,” which they roughly define as “untreated water from streams, rivers, lakes, or underground aquifers which is used to supply private wells and public drinking water.” There is growing recognition that protecting the source from contaminants is often more efficient and cost-effective than treating drinking water later.

Loans under the DWSRF are typically low interest and can be repaid over 20 years. There is some flexibility given to the states to allow them to waive the principal repayment, offer negative interest rates, or extend the loans to 30 years in specific hardship cases.

Up to 31 percent of these capitalization grants can be set-aside to administer the SRF and state source protection programs and to fund source water protection activities, including land acquisition. Up to 15 percent of the set-aside can be used for land conservation and voluntary, incentive-based protection measures, with no more than 10 percent used for a single type of activity, such as land protection. Maine’s FY07 DWSRF allotment was \$8.23 million.

- **Community Development Block Grants (CDBG)**

Federal Department of Housing and Urban Development

<http://www.hud.gov/offices/cpd/communitydevelopment/programs/entitlement/>

The Department of Housing and Urban Development provides Entitlement Communities Grants for the principal cities of Metropolitan Statistical Areas (MSAs), other metropolitan cities with populations of at least 50,000; and qualified urban counties with populations of at least 200,000 (excluding the population of entitled cities). CDBG funds may be used for activities that include, but are not limited to acquisition of real property; relocation and demolition; and construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes.

In FY08, the state of Maine received a CDBG allocation of \$12.7 million for grants to smaller

communities, and the city of Bangor received a direct allocation of just over \$1 million. An additional HUD program is the Economic Development Initiative program. Projects within this program are earmarked directly by Congress and are generally awarded under \$300,000. Funds may go towards park acquisition and improvements, but directly compete with other economic, social, housing, and cultural development projects.

- **Forest Legacy Program (FLP)**

U.S. Forest Service

www.fs.fed.us/spf/coop/programs/loa/aboutflp.shtml

The FLP was established in 1990 to provide federal funding to states to assist in securing conservation easements on forestlands threatened with conversion to non-forest uses. Fee transactions are also used under the program, either for the whole transaction or combined with easements to achieve a state’s highest conservation goals. A state voluntarily enters the program by submitting an Assessment of Need (AON) to the Secretary of Agriculture for approval. These plans establish the lead state agency, the state’s criteria for Forest Legacy projects, and Forest Legacy areas within which proposed Legacy projects must be located. Once the AON is approved, the state lead agency can submit up to three grants each year for projects within the Forest Legacy Areas. The federal government may fund up to 75 percent of project costs, with at least 25 percent coming from private, state, or local sources.

In fiscal year 2007, the FLP was funded at \$56.4 million, providing grants to states for 31 forest conservation projects.

In 2008, two projects will be funded in Maine at \$4.38 million, Lower Penobscot River and Grafton Notch. Currently, the number one project on the 2009 proposed project list is Machias River at \$3.45 million.

ELECTION OVERVIEW

Many of the financing options covered in this report ultimately require voter approval. As such, an examination of recent election history can be instructive. The Penobscot Valley voters have shown consistent support for LMF bonds measures. However, past election results are not necessarily indicative of current voter sentiment on public financing nor on a particular proposal, therefore public opinion polling is

recommended once parks and open space proponents have narrowed the field of potential financing options to two likely options.

VOTER REGISTRATION

As of November 2006, there were 64,500 registered voters in the Penobscot Valley. Bangor had the most registered voters with 21,100, and Bradley had the least with 1,180.

Table F. The Penobscot Valley Registered Voters

Municipality	1996	1998	2000	2001	2002	2004	2006
Bangor	23,600	19,100	18,700	17,900	18,000	20,300	21,100
Bradley	957	1,020	1,070	1,100	985	1,130	1,180
Brewer	6,860	6,880	6,550	6,830	7,100	7,890	7,840
Eddington	1,600	1,660	1,360	1,460	1,460	1,670	1,570
Hampden	5,140	5,130	5,400	5,610	4,940	5,400	5,620
Hermon	3,350	3,480	3,180	3,250	3,320	3,870	3,940
Holden	2,600	2,090	2,190	2,200	2,330	2,650	2,550
Milford	2,750	2,710	2,910	3,110	3,240	2,500	2,460
Old Town	6,510	6,600	5,360	5,330	6,670	7,510	7,560
Orono	11,000	8,740	8,620	5,820	6,130	7,660	6,510
Orrington	3,150	2,730	3,050	3,010	3,100	2,490	2,880
Veazie	1,610	1,620	1,390	1,350	1,140	1,270	1,310
Total	69,100	61,700	59,800	56,900	58,500	64,300	64,500

Source: Maine Bureau of Corporations, Elections, & Commissions. Enrolled and Registered Voters. Available at <http://www.maine.gov/sos/cec/elec/enr/enr06g.html>.

VOTER TURNOUT

Table G provides a voter turnout summary for all presidential and general elections between 1996 and 2006. Veazie had the highest average voter turnout during this period with 66 percent. The Town of Milford had the lowest average turnout of 48 percent.

VOTER SUPPORT FOR LAND FOR MAINE'S FUTURE

Voters in the Penobscot Valley have consistently supported bonds to fund LMF by greater than 60 percent. In fact, LMF pass by a majority in each municipality in every referendum. Table H provides a voter history for referendums for LMF between 1999 and 2007.

Table G. The Penobscot Valley Election Turnout History

Municipality	Presidential 1996 (% Turnout)	General Election 1998 (% Turnout)	Presidential 2000 (% Turnout)	General Election 2002 (% Turnout)	Presidential 2004 (% Turnout)	General Election 2006 (% Turnout)
Bangor	14,000 (59%)	9,340 (49%)	14,300 (77%)	11,200 (62%)	16,600 (82%)	11,200 (53%)
Bradley	646 (68%)	405 (40%)	688 (65%)	538 (55%)	788 (70%)	567 (48%)
Brewer	4,660 (68%)	3,240 (47%)	5,030 (77%)	3,840 (54%)	5,430 (69%)	3,900 (50%)
Eddington	1,030 (64%)	660 (40%)	1,120 (82%)	889 (61%)	1,290 (78%)	953 (61%)
Hampden	3,420 (67%)	2,750 (54%)	3,680 (68%)	3,010 (61%)	4,240 (79%)	3,320 (59%)
Hermon	1,990 (59%)	1,330 (38%)	2,340 (74%)	1,840 (55%)	2,800 (72%)	2,060 (52%)
Holden	1,560 (60%)	1,080 (52%)	1,770 (80%)	1,440 (62%)	2,010 (76%)	1,520 (60%)
Milford	1,390 (51%)	916 (34%)	1,460 (50%)	1,150 (36%)	1,720 (69%)	1,220 (49%)
Old Town	3,950 (61%)	2,540 (38%)	4,020 (75%)	3,040 (46%)	4,480 (60%)	3,030 (40%)
Orono	4,520 (41%)	2,870 (33%)	4,860 (56%)	2,810 (46%)	5,330 (69%)	3,370 (52%)
Orrington	1,950 (62%)	1,250 (46%)	2,040 (67%)	1,600 (52%)	2,290 (92%)	1,750 (61%)
Veazie	1,030 (64%)	689 (43%)	1,010 (73%)	774 (68%)	1,070 (84%)	862 (66%)
Total	40,100 (58%)	27,100 (43%)	42,300 (70%)	32,200 (54%)	48,000 (74%)	33,700 (52%)

Source: Maine Bureau of Corporations, Elections, & Commissions

Table H. The Penobscot Valley Land For Maine's Future Voter History

Municipality	Referendum Nov-2 1999			Referendum Nov-8 2005			Referendum Nov-6 2007		
	Yes (%)	No (%)	% Voting	Yes (%)	No (%)	% Voting	Yes (%)	No (%)	% Voting
Bangor	5,650 (64%)	3,220 (36%)	46%	5,290 (64%)	3,020 (36%)	41%	3,300 (66%)	1,720 (34%)	24%
Bradley	274 (59%)	194 (41%)	46%	229 (61%)	144 (39%)	33%	161 (62%)	100 (38%)	22%
Brewer	2,030 (59%)	1,400 (41%)	50%	1,500 (56%)	1,190 (44%)	34%	1,100 (60%)	747 (40%)	24%
Eddington	396 (53%)	355 (47%)	45%	386 (56%)	309 (44%)	42%	257 (54%)	222 (46%)	31%
Hampden	1,460 (58%)	1,040 (42%)	49%	1,530 (64%)	863 (36%)	44%	1,080 (62%)	662 (38%)	31%
Hermon	722 (56%)	572 (44%)	37%	765 (51%)	745 (49%)	39%	496 (53%)	446 (47%)	24%
Holden	608 (55%)	489 (45%)	53%	622 (56%)	490 (44%)	42%	419 (54%)	361 (46%)	31%
Milford	569 (60%)	373 (40%)	35%	465 (62%)	291 (38%)	30%	324 (65%)	171 (35%)	20%
Old Town	1,790 (66%)	911 (34%)	41%	1,520 (67%)	752 (33%)	30%	895 (65%)	480 (35%)	18%
Orono	2,410 (76%)	757 (24%)	36%	2,260 (78%)	643 (22%)	38%	1,290 (82%)	280 (18%)	24%
Orrington	743 (56%)	591 (44%)	49%	737 (57%)	548 (43%)	52%	465 (58%)	332 (42%)	28%
Veazie	415 (62%)	250 (38%)	41%	360 (61%)	228 (39%)	46%	294 (68%)	141 (32%)	33%
Total	17,100 (63%)	10,100 (37%)	44%	15,700 (63%)	9,230 (37%)	39%	10,100 (64%)	5,660 (36%)	24%

Source: Maine Bureau of Corporations, Elections, & Commissions
(<http://www.maine.gov/sos/cec/elec/prior1st.htm>)

CONCLUSION

This feasibility report is meant to inform consideration of new funding for parks and open space by identifying potential funding mechanisms available to the municipalities of the Penobscot Valley. If the effort to create open space and recreation opportunities within the Penobscot Valley is to be considered a success, it is essential to move beyond assessing priorities and actually create parks. In order to accomplish this goal, a combination of local, state, and federal funding must be utilized to create a “funding quilt” that will sustain land acquisition in both the near and long term. In TPL’s experience, local dedicated funding is the foundation of a robust and reliable parks and recreation program. As such, this report provides greater detail on local financing options, including an analysis of the fiscal capacity and legal requirements of various approaches.

Next steps should include narrowing funding options to those that match the needs identified in the regional Greenprint planning processes and testing voter attitudes toward a specific set of funding proposals. TPL recommends conducting a public opinion survey that tests ballot language and tax tolerance for the program priorities identified by the voters in the Penobscot Valley. In addition, parks and open space stakeholders should cultivate relationships with the relevant state and federal funding partners and develop a portfolio of potential park projects.

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