

Chapter

4

OPEN SPACE



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I. Introduction

New Hampshire is the most rapidly growing state in the Northeast. In response, Town Meetings around New Hampshire in 2003 voted over \$30 million for land conservation, thereby demonstrating commitment to what is being called the “green infrastructure” needs of a town for both present and future generations. These include:

- water supply and quality including both surface and sub-surface or “aquifer” water resources;
- rural and scenic roads, gateways, and hillside vistas;
- trails accessible to all neighborhoods and access for fishing and hunting;
- forestry and agricultural resources (the “working landscape”);
- room to roam for wildlife;

and the economic benefits of open space to a town and its citizens.

“Green infrastructure” is a strategically planned and managed network of open space that supports natural ecological processes. These processes sustain air, soil, and water quality and contribute to the health and quality of life in all its forms. In 2002, Peterborough voters established a **Land Acquisition Capital Reserve Fund**, and the Board of Selectmen appointed an Open Space Committee to prepare a plan so that the fund would be spent according to a consistent, objective protocol and established criteria. The Master Plan Steering Committee further charged the committee to add an Open Space chapter to the 2003 Master Plan.

To gain townspeople voice in the process, the committee sent a questionnaire to all 2,300 households in Town that proved helpful in establishing a ***Checklist for Prioritizing Open Space*** (see page 7) and identifying key properties in Town that should be considered for permanent preservation as open space.

Permanent open space comes in many varieties, from in-town pocket parks (Putnam Park) to outlying farmland preserved forever by conservation or farmland easement (Sunnyfield

Farm on Route 136). This report describes types of open space and their benefits, land conservation methods (including funding), and criteria for assessing a property for its open space value – steps that will help the Town identify potential conservation projects that would greatly strengthen the Town’s network of preserved open space lands.



Victor and Victoria enjoy a day at easement-protected Sunnyfield Farm, Route 136.

II. What previous Master Plans have said about Open Space

The 1992 Master Plan established one broad goal under Environment and Open Space: ***“Preserve the scenic and natural resources of the town.”***

Policies to achieve that goal included:

- preserving the rural character along the main entrance roads;
- preserving the rural character in the outlying areas of Town, including the “primarily residential, agricultural, and forested qualities that exist in those areas now” and avoiding residential “strip development” of one house per every 200 feet;
- protecting “environmentally sensitive areas of Town including wetlands, aquifers, the 100-year floodplain, and steep slopes.”

The 1992 Master Plan also recommended preservation of open fields and farmlands, trails expansion, and working with owners of large tracts to ensure that future development “will correspond with the Town’s long-range plans.”

Since earlier master plans (1974 and 1986), the Town has adopted protective overlay zones for aquifers, wetlands, floodplain, and shorelines and amended subdivision regulations to require that subdivisions over 50 acres be designed as Planned Residential Developments that provide for buffering and open space set-asides.

The 1986 Master Plan recommended other steps, which are all endorsed by this Master Plan:

- that the Town pursue right-of-first-refusal or conservation easements for MacDowell Colony, Monadnock Country Club, The Common, and Upland Farms;
- that all new development in primary aquifer areas be connected to town sewer;
- that the Town discourage development in large agricultural areas;
- preservation of the east side of Route 202 South as a greenbelt from Noone Falls to the Jaffrey line;
- and strict controls on roadside development on Route 101 East up Temple Mountain to maintain safety and scenic qualities.

III. Peterborough’s 1972 Natural Resources Plan in Retrospect

Several of the 1972 Natural Resources Plan’s recommendations have been realized. These include public access to Cunningham Pond, the establishment of protected areas along the Contoocook River corridor, a trail system utilizing the old railroad right-of-way, and zoning overlays to protect certain natural resources.

Significant among the unaccomplished recommendations are the protection of: 1) General Miller Road swamp; 2) Town Line Brook corridor; 3) ConVal Swamp; 4) West Peterborough Marsh; and 5) Otter Brook with its related gorge and source, Diamond Swamp; and 6) the formal establishment of Town Forest(s).

As a caution about the difficulty of implementing natural resource protection plans, the Evans Flats wetlands complex was identified as the #1 top priority for land conservation. Since the report, it has been further filled in, with little to no buffer against run-off contaminants. Also not yet adopted are regulations addressing development on both steep slopes (recommended to begin at 15%) and at elevations 1,200 feet or more above sea level.

IV. Open Space Questionnaire Results

In 2002, Peterborough voters at Town Meeting established a Land Acquisition Capital Reserve Fund for the purchase by the Town of permanent open space. To gain townspeople voice in setting priorities for the use of that Fund, the Open Space Subcommittee sent a questionnaire to all 2,300 households in Town. There were 449 responses.

In addition to prioritizing open space functions (such as water quality protection, preservation of natural



Open Space: “More Than Land”

shorelines, trails expansion, wildlife habitat), respondents provided information about favorite views, favorite getaways in Town, and their degree of willingness to support town funding of open space conservation.

Somewhat as a warm-up question, people were asked the following question:

Why do you live in Peterborough? Please check no more than three.

“Aesthetics / natural beauty” was the clear front runner, checked by 52% of the respondents. Following at a distance came “Culture and the arts” (33%); “Friendly atmosphere” (31%); “Healthy lifestyle” (31%); and “Room to roam with wildlife” (30%).

Other choices were “Close to job” (25%); “Vibrant downtown” (18%); “Quality of schools” (18%); “Close to family” (17%); “Good community services” (13%); “Family safety” (11%); “Born here” (7%); “Economy of living” (5%).

Of the choices offered, “Aesthetics / natural beauty” and “Room to roam with wildlife” have the most direct association with open space preservation.

Open Space Priorities

When asked to help prioritize use of the Town’s Land Acquisition Capital Reserve Fund, respondents stated a clear preference for the Town’s water resources and waterways. Respondents ranked options in the following order of importance:

▫ Water quality protection areas (wetlands, aquifers)	396
▫ Natural shorelines on rivers, ponds, and streams	371
▫ Forests for timber, air, and water quality	348
▫ Walking / hiking trails	346
▫ Wildlife habitat	342
▫ Unfragmented blocks of pristine land	324
▫ Undeveloped ridgelines	304
▫ Trails accessible to all neighborhoods	
○ (ex. Shieling Forest, Old Rail Trail)	302
▫ Agricultural heritage (hayfields, barns, pastures, orchards)	300
▫ Undeveloped roadsides	275
▫ Small neighborhood parks (ex. Putnam Park)	272
▫ Historical features (stone walls, cellar holes)	267
▫ Links connecting isolated blocks of open space	265

When asked to identify areas in Town for conservation, respondents named features such as waterways, hillsides, and wetlands more often than specific parcels.

- 67 mentioned stream and river corridors, many specifying the Contoocook River, Nubanusit Brook, and riparian areas such as Bogle Brook.
- 33 cited hillsides and ridgelines, with an additional 24 specifying the Wapack ridgeline (Temple Mountain, Pack Monadnock, and North Pack).
- 30 cited water resource areas (wetlands or aquifers).
- 26 cited open fields and farm lands.
- 19 specified that any open space not presently developed should be conserved.

As for specific parcels, 39 surveys cited the Cunningham Pond area, with wording such as “area immediately surrounding Cunningham Pond;” 14 cited “The Commons on Old Street Road;” 13 mentioned “Upland Farms;” and 8 the “Old Stone Barn.”



**Cunningham Pond:
Top-ranked Peterborough Natural Asset**

The Cunningham Pond area was identified as the strongly-favored location in Town for passive recreation (fishing/swimming/boating/hiking), with the Wapack ridge area (Miller State Park and the associated Raymond Trail and Wapack Trail) a distant second, with MacDowell Dam area close behind.

With the intention of identifying important “viewsheds” that should be conserved, the questionnaire asked respondents to identify their favorite views in Town. Peterborough’s location with Monadnock to the west and the Wapack ridgeline to the east is appreciated by its residents.

Mount Monadnock is the favorite view with a total of 147 mentions. The specific view of Monadnock that was mentioned most often is the approach to town from Temple Mountain on Route 101. That view is pictured on the Town’s 2002 Annual Report in a painting by Daniel Thibeault. An additional 37 respondents mentioned the view of Mt. Monadnock from Old Street Road. One respondent spoke for many by writing “Mount Monadnock from wherever.” Another asked whether there were any views of Mt. Monadnock from conservation land in Town. (The view from Old Street Road is across a field protected by neighborhood initiative.)

For a significant number of people, when asked for their favorite view, or favorite natural area in town, or favorite place to hike, the answer was a variation on “my own backyard,” “the woods we live by,” “the quiet road near my house,” “the trees on the wooded section of my yard,” and “the view from my rear window.”

Desirable/Undesirable Features of Town

Following the lead of questionnaires in many other towns, the Open Space survey asked townspeople to cite the most desirable feature of the Town. A common theme emerged: rural surroundings with a vibrant downtown at the center, combined with a small town feeling and sense of community. Typical responses to this question were “a good lively town center surrounded by a distinctly rural and open countryside;” “the downtown district, parks, and natural setting;” “lots of woods and wildlife, coupled with a vibrant downtown and activities in the arts;” “a healthy balance between open space and vibrant economic/commercial development.” Small town atmosphere, natural surroundings, a pleasing downtown, or sense of community were mentioned in all but 34 responses.

As for the least desirable feature of the Town, traffic congestion led with 74 mentions, followed by the strip development appearance of the two plazas and Routes 101/202 (67 mentions plus another 21 for the gravel pit entrance to Town along Route 202S). Traffic congestion was divided approximately equally between Routes 101/202 and the downtown area. Lack of adequate parking was cited in 37 responses, with 17 of those specifying downtown parking; lack of adequate shopping was mentioned by 25, with 13 of those specifying a major grocery store.

Representative responses included: “Increase in traffic,” “unattractive strip development along 202 and 101,” “parking and traffic (at certain times),” and “the appearance of the Peterborough Plaza and Monadnock Plaza. I frequent both but would like to see them upgraded from strip mall look.”

Future Growth

The questionnaire had two questions dealing with population. Listed below are the questions and answers, which have been averaged. (The current population was given at 5,883 persons.)

What do you think is the ideal population for the town? 6,481

What is the largest population you would ever want Peterborough to have? 8,205

Funding of Open Space

In response to the question, “Do you support town funding of open space,” 88% checked the “YES” box.

Summary and Conclusion

The primary goal of the questionnaire was to gain assistance in setting open space priorities for the Town. Townspeople give wetlands, aquifers, and natural shoreland their

first priority; they value unfragmented forests, trails, and wildlife habitat; and undeveloped ridgelines, in that order. Cunningham Pond is the favored natural/recreational area in Town, and townspeople desire to have that resource protected. As indication of the Town's abiding rural character, many people's favorite natural area in Town is their own backyard. And their ideal town population is not much larger than today's. Increased traffic and sprawled development along 202 and 101 are the two main negatives to the Town; and its small town character surrounded by a pleasing natural landscape is its main positive.

As a secondary goal of its questionnaire, the Open Space Committee was eager to stir thoughtful consideration of the issues involved in town planning for open space. One respondent thanked the committee for the opportunity to do just that.

V. Criteria for Open Space Conservation

The following checklist was shaped by responses to the open space questionnaire. A checklist is essential for many reasons:

- to make best use of limited financial and volunteer resources;
- to ensure that land conservation is strategic and consistent rather than haphazard;
- to help landowners and townspeople understand community priorities;
- to focus on a project's true merits;
- to flag potential problems.



The different faces of open space.

Checklist for Prioritizing Land Conservation

Parcel #/Size/Location: _____ **Assessed value: \$** _____

Protects/Expands:

- Drinking water resources (aquifer recharge; wellhead protection; surface waters; wetlands; floodplain)
- Shoreline buffers on rivers, ponds, streams
- Scenic views (visible from public road or recreation area; greenways at Town entrances)
- Existing or potential trails, including Class VI roads
- Wildlife habitat or wildlife corridor connection
- Forest lands > 10 acres
- Undeveloped ridgelines
- Agricultural lands (farm, pasture, orchard) >10 acres
- Historical or cultural site
- Unique features (rare & endangered species, eskers, floodplain forest, spring seeps, vernal pools, old growth forest, etc.)
- Other public benefit _____

Provides:

- Wildlife habitat diversity
- Passive recreation (public access)
- Educational opportunities (field trips, school groups)
- Parkland within or connecting neighborhoods

Other Attributes:

- Owner interested in donation of conservation easement or bargain sale to Town
- Favorable purchase price (not to exceed appraised value)
- Potential for matching or leveraged funds
- Stewardship plan with funding available
- Close proximity or linkage with other conservation land
- Strong local support
- Large parcel size
- Threat of development inconsistent with Master Plan
- No known contamination

Overall Rating:

High Priority Medium Priority Low Priority

Recommended action:

VI. Wetlands

Generally, wetlands are lands where water saturation determines the nature of underlying soils and the types of plants and animals living in the soil and on its surface. Wetlands vary widely because of local differences in soil types, topography, climate, hydrology, water chemistry, vegetation, and other factors, including human disturbance.

Wetlands have come to be protected by law because they serve a number of functions.



Wetland, US 202 South

- They act as filters that purify water flowing through, including drinking water.
- They help to maintain water table levels during drought.
- They sustain a rich diversity of plant and animal species – more than any other land type.
- They are an important supply of food for the entire food web.
- By containing excess water, they help prevent flooding downstream.
- They are a source of recreation and aesthetic appreciation.

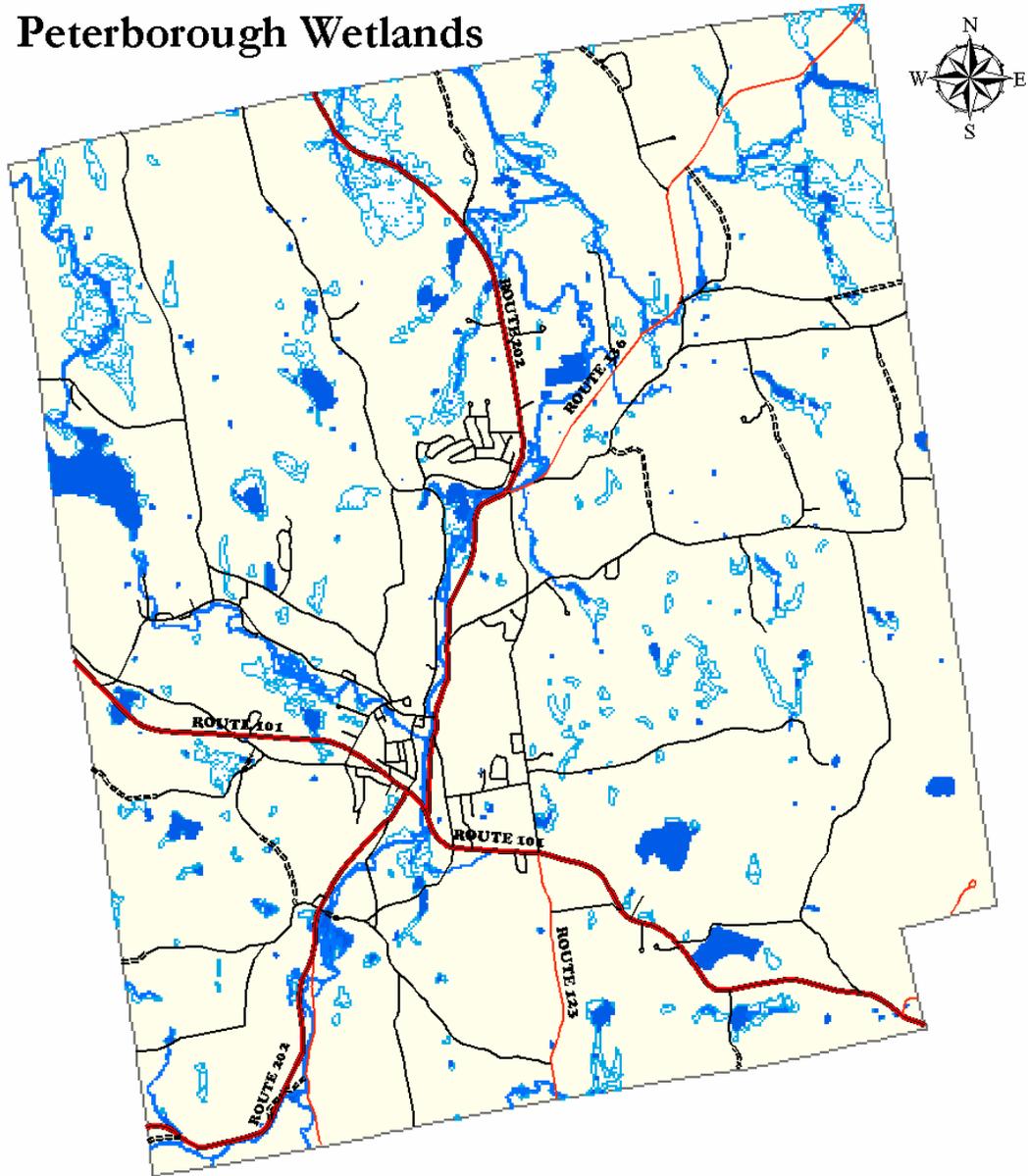
The wetlands of Peterborough include marshes, swamps (also known as forested wetlands), wet meadows, one bog, and vernal pools. Over 14% of Peterborough is classified as wetland. Here is a brief description of the types of wetlands found in Peterborough.

➤Marsh

Cattail marshes are a common type of wetland, visible from many roads in Peterborough. They are shallow wetlands with mineral muck soils (not peat); the primary form of vegetation in them is cattails and emergent grasses. They vary in size from small pockets to large wetland complexes.

Cattail marshes are highly-productive, natural communities that provide important ecological functions. The cattails themselves, for example, can regulate water levels by storing excess water in their roots and stalks. They also provide habitat for many types of birds and waterfowl, fish, muskrats, beavers, frogs, and both snapping turtles and painted turtles. They also are a great spot to hear spring peepers. Currently, the great productivity of cattail marshes is being threatened by an invasive species, purple loosestrife (*Lythrum salicaria*), which is beginning to make headway in Peterborough.

Peterborough Wetlands



Legend		1:55,000	
Surface Water	Class I	0 1,625 3,250 6,500 9,750 Feet	
Nat'l Wetlands Inventory	Class II	0 395 790 1,580 2,370 3,160 Meters	
	Class V		
	Class VI		

Created by Peterborough Office of Community Development, July 2003.
Data Sources: Town GIS, Nat'l Wetlands Inventory-US Fish and Wildlife Service, and NH Dept of Transportation.

➤Swamp

A swamp is often confused with marsh but is distinguished by the presence of trees and shrubs rather than open water. Swamps occur on saturated soils and are flooded for most, if not all, of the growing season. A red maple swamp is typical of our region. The brilliant fall foliage of red maples (also known as “swamp maples”) is indication of an underlying wetland.

The vegetation in swamps is predominately dense forest or tall shrub thicket. Trees that can tolerate saturated soils are hemlock, spruce, red maple, yellow birch. Certain ferns, blueberries, spotted touch-me-nots, and skunk cabbage are common swamp plants. Swamps provide habitat for a wide variety of wildlife.

➤Bog

Bogs are characterized by substantial peat accumulation (> 40 cm), high water tables, and acidic-loving vegetation. There are no significant inflows or outflows of water from a bog. They are covered with a layer of floating vegetation adapted to wet, acidic, and nutrient-poor soils. Sphagnum moss is the dominant plant in bogs, along with some uncommon wildflowers, especially orchids. Bogs are a rich teaching tool about a glacier’s footprint, and about unique soils creating unique plant and animal communities.

➤Vernal Pool

Often mistaken for useless puddles or mud-spots in the woods, vernal pools are important, productive hatcheries for an abundance of species. They are temporary pools of ice and snow melt that form in the late winter and spring and often disappear by late summer. Because they are temporary, they do not support fish, allowing many aquatic and amphibian species to lay their eggs and hatch the next generation in a predator-free wetland. Frogs, toads, and salamanders migrate to wetlands to lay their eggs in early spring. The chorus of spring peepers announces mating and egg-laying time, as well as the presence of a wetland. Eggs laid in vernal pools have the greatest odds of survival. Once hatched, many species return only to the pools where they were born, and can reproduce nowhere else.

Vernal pools are easily lost through human disturbance. Few people know their importance as birthing pools for the intricate web of life; only a few towns have protective ordinances for vernal pools. Landowners unaware of the important ecological role of vernal pools often fill them in.

➤ Wet Meadow

A meadow with certain ferns growing in it gives suggestion of wetland soils. The familiar Town-owned field at Cheney Avenue and Old Street Road is partial wetlands. A core sample of soil would reveal underlying soil types characteristic of a wetland.

VII. Rivers, Lakes, and Shoreline Buffers

Peterborough has 33 surface water bodies larger than one acre, adding up to 20 miles of shoreline and 357 acres of water surface. There are 34 rivers and streams in Town (15 are intermittent), adding up to 60 miles in length.

Although the Town's drinking water supply comes entirely from subsurface aquifers, the quality of its surface waters is equally important as the high-yield aquifers are recharged from surface waters. Naturally vegetated shoreline buffers are essential for many reasons.

- **Water quality.** Natural buffers filter runoff contaminants and excess nutrients from lawns and agriculture including nitrogen and phosphorous that lead to algae/eutrophication of water bodies. They trap sediment (sand/salt from roads), protect against erosion by anchoring shorelines, and lessen pesticide/petroleum contamination through microbial action. Water contamination used to occur through “point” pollution from sources such as factories, sewers, and gas stations. Today, bacteria, toxic materials, excess nitrogen, and phosphorous come mostly from “non-point” sources (runoff from backyards, agricultural fields, roadways, and parking lots with inadequate natural buffers).
- **Wildlife/fish habitat & migration corridor.** Stream corridors and wetlands are used by over 90% of the State's wildlife species and provide the preferred habitat for 40% of those species. Spring comes earliest along river corridors. Early emergent vegetation and insects support wildlife, including fish. Fallen leaves decay to start the food chain, and enriched stream corridor soils assist the diversity of plants and animals that support unequalled diversity of both.
- **Groundwater (aquifer) recharge/discharge areas.** Groundwater (aquifer) and surface water interchange at certain junctures. Taking care of either one assists the others.
- **Scenic value.** Saturated soils support shoreline red maple, birch, and a dark backdrop of hemlock, creating the majority of the region's dramatic fall foliage. Townspeople and visitors seek the restorative beauty of waterways.
- **Recreational value** for fishing, hunting, swimming, walking. As one example, the Old Rail Trail along the Contoocook River north of the Town Recycling Center is enjoyed by many townspeople.
- **Educational value.** Field trips head for waterways whether to study animal tracks, to bird watch, or to botanize the diverse plant community. The Fremont Field beaver pond is a popular location for school field trips, and the area has been adopted by the 4th Grade at Peterborough Elementary School for nature study throughout the seasons.
- **Flood control.** The floodplain provides a spillway for storm surges and spring runoff. Development in the floodplain has led to greatly increased flooding. The current cycle of global climate change is predicted to bring increased storm surges, adding importance to maintaining a natural floodplain.

The Peterborough Conservation Commission's land protection priority has been along the Contoocook River corridor with some success to the north of Town. Other stream corridor areas of importance include Bogle Brook, Otter Brook, Nubanusit Brook, and Cunningham Pond. The Town purchased the Hall property in 2001, protecting significant shoreline along Nubanusit Brook, and Fairfield Raymond donated a protective buffer easement along Otter Brook. The "Contoocook River Project" in 2001 conserved over 80 acres along the River that were slated for 12 house lots. Besides extensive shoreline and wetlands, the acreage included a string of vernal pools.

VIII. Agriculture

At the end of the segment on "Agriculture" in the 1987 Peterborough Town History, the writers posed the question: "What will Peterborough look like when the Town reaches its three-hundredth birthday in 2039? Will growth increase to such an extent that we will lose more farmland, or will the town keep these areas in a protected state?"

The USDA considers the category of Prime Farmland to be of major importance in meeting the nation's short- and long-range needs for food and fiber. In western Hillsborough County only 3% of the land is considered Prime Farmland (determined by slope and soil type); however, hard work and historic use have resulted in productive farmland in Peterborough that will never show up on a soils map as prime agricultural.

Peterborough has only a few remaining working farms. These are mostly horse or cattle farms; one raises organic fruits and vegetables. Some farms, no longer active, still have fields managed for hay. Agriculture is on the rise in New Hampshire, but that growth is in the area of specialty crops.

In addition to their economic value, farms provide connection to Peterborough's rural past; add diversity to the landscape including sweeping views to the horizon, and serve as important buffers between developed areas. Increasing attention is being paid in the State to preserving farmland as the state's fair share of food and fiber production for the long-term. There are a variety of funding sources that help with farmland conservation, including the preservation of historic barns. Several towns in New Hampshire have purchased the development rights on farms and orchards, guaranteeing that they will remain farmland in perpetuity, and enabling the farming family to continue operations.

IX. Forest Resources

For the first time in its history, New Hampshire is undergoing "terminal loss" of its forests. In years past, the forest has been cut repeatedly – to supply masts for the king's navy, housing material, fuel wood, and other wood products– but always with the potential to grow back. With development, the forest is being replaced by roads and buildings and will not grow back. Besides its economic value as the timber industry, the forest provides mast crops (fruits, nuts, and seeds) for wildlife. Oaks, beech, black cherry, and conifers (cone-bearers such as white pine and spruce) are among the leading mast producers. The forest provides shoreline shade to maintain water temperatures critical for aquatic species; a scenic backdrop; respiration that helps maintain air quality and quantity; woodlots for

cordwood and lumber to build our homes; trails for getaway; and an anchor against soil and wind erosion. The list of forest benefits is long.



In the past year, the timber yield tax paid the town \$14,000, indicating stumpage value to landowners of \$140,000. Beyond that amount, the timber industry employs residents who are foresters, loggers, mill yard and lumberyard workers. As added economic benefit,

Shieling Forest

the forested landscape is part of the Town’s attraction to visitors. New Hampshire’s forests contribute 12% of the State’s gross state product. (*New Hampshire Everlasting*, Society for the Protection of New Hampshire’s Forests, 2001.) To be viable for sustainable forest management, a forest parcel should be ten acres or larger. (Swift Corwin, Forester, personal comment.)

X. Trails in Peterborough

In 2001, the Conservation Commission put out a guide to 12 public trails in Peterborough (available at the Town House). In addition to trails on public lands, most neighborhoods include trails on privately owned land that are open to neighbors through permission of the landowners. Class VI roads are a third category in the Town’s substantial trails network. These are abandoned roads that remain town-owned and open to the public. Due to lack of parking capacity at access points to these trails, the Conservation Commission did not include them in its trail guide.

The Conservation Commission and New Common Pathway Committee welcome suggestions on expanding the Town’s network of trails, including pursuing trail easements across private property that could extend existing public trails.

XI. Wildlife in Peterborough

“Room to roam with wildlife” was identified as a high priority for a majority of respondents to the open space questionnaire. Neighbors exchange news of moose sightings, bear sightings, bobcat tracks, who hears the first spring peepers in early April, and which neighborhood nestbox hosts a pair of bluebirds.

Different species have different habitat needs. For example, bluebirds require open field, wood ducks require marsh, moose migrate between winter uplands and summer lowlands, bear have a home range of hundreds of acres, and bobcat favor high elevation south-facing ledges. A diversity of habitat types leads to a diversity in animal species.

Wildlife habitat and travel corridors have not been systematically mapped in Town; but anecdotal information is plentiful, and many townspeople have knowledge and understanding of the needs of different species.



- Moose seek red maple swamps.
- Amphibians migrate from their woodland homes to wetlands on rainy spring nights, and roads located between uplands and wetlands are death traps during that migration.
- Moose, black duck, and great blue heron move into areas cleared and flooded by beavers; and when beavers depart an area, a new succession of species moves in as the water levels recede and the forest slowly grows back.
- Oak forests and the acorns they produce support wild turkey, deer, wood duck, grouse, woodpeckers, bears, raccoons, chipmunks, blue jays, and a host of other species.
- Cavity trees in a forest provide homes to several duck species, woodpeckers, owls, bluebirds, flying squirrels, honey bees, fishers – a total of about 40 species of wildlife.
- Open fields and their edges host a whole category of wildlife species specific to that habitat. The richest diversity is found where one land type meets another, such as open field meeting forest or forest meeting wetland.

According to the New Hampshire Wildlife Federation, fragmentation of the natural landscape by roads and buildings poses the gravest threat to the reproductive success of wildlife species. Increasing disturbance through recreational trails that include motorized vehicles is another means of fragmentation. When considering the health of wildlife, land conservation efforts should seek to expand existing conservation areas. The larger the area, the greater its value to wildlife.

In considering Peterborough's wildlife, steep slopes, wetlands, shoreline corridors, forests, and farmlands, all are relevant. Each supports a unique community of plants and animals, and each helps make up a rich diversity that is important to the health and functioning of the natural landscape that supports life in all its forms.

XII. Regional Land Conservation Partners

Rivers, aquifers, unfragmented blocks of open space, wildlife habitat, trails, and scenic ridgelines do not stop at Peterborough’s borders. Regional cooperation, open space planning, and attention to pollution sources are essential.

The Peterborough Conservation Commission worked with the town of Hancock, the Harris Center, and N.H. Fish & Game to extend the Old Rail Trail well into Hancock and, presently, is working with the towns of Temple and Sharon to add Temple Mountain to the region’s protected open space. A representative from the Conservation Commission serves on the Southwest Region Planning Commission’s Natural Resources Advisory Committee, along with representatives from other towns. However, a past practice of annual regional Conservation Commission meetings to discuss regional issues has been discontinued. With limited time and resources available, the all- volunteer Conservation Commission tends to focus within Town borders.

XIII. Zoning and Natural Resources

With the exception of the existing industrial, commercial, and general residence zoning concentrated along or adjacent to Route 202 and along Union Street into West Peterborough, the rest of Peterborough is zoned family or rural. Family-zoned land outside of the immediate downtown area stretches along historic roads such as Old Street Road and part of Sand Hill Road. Some subdivisions were created off of historic roads, such as Hunter Farm Road off of MacDowell; Reynolds Drive and Blueberry Lane off of Sand Hill Road; and Pine Ridge off of Hunt Road and/or Route 202. All of these areas are served by Town water and some by Town sewer. With the exception of some small areas of infill and part of the new development off Union Street, housing development is now occurring in the rural zone.

The current zoning law requires each rural lot to have three acres and 200 feet of frontage on a Town road. If the owner of land without sufficient road frontage wishes to develop it, he must either build a road to Town standards or a private road that is limited to five houses. In addition, some developers are marketing large lot subdivisions, usually at least 11 acres, to qualify for current-use zoning that offers lower tax rates on parcels ten acres and greater.

How does the current zoning address open space issues?

The current rural zoning requirements do not require the developer to assess the open space importance of land before development, nor do they allow the Planning Board to waive frontage or acreage rules to allow conservation placement of homes, unless the developer is willing to build a cluster development. Since the Town does not have a road plan, configuration of future town roads is left to the convenience of the developer with Public Works Department and Fire Department input as to technical details.

Cluster zoning allows a developer to increase density on a parcel under certain criteria. Setting aside land for public benefit, such as open space or playground, may allow the developer to increase the density of the development by up to 30%.

No large standard subdivisions (more than ten houses) have come before the Planning Board in the last ten years. During subdivision review, the Planning Board may suggest modifications to the proposed subdivision, but there is no requirement that the developer set aside a certain percentage of land for open space. In a standard subdivision, individual lots can include streams, wetlands, bogs, and other fragile lands in the three acre minimum lot size, as long as there is a suitable site on the property for house, well, and septic system. The approval of septic locations is left to the State. Driveway access to a lot of record may cross wetlands, and driveway permits are issued by the Public Works Director or (in the case of State highways) by the State.

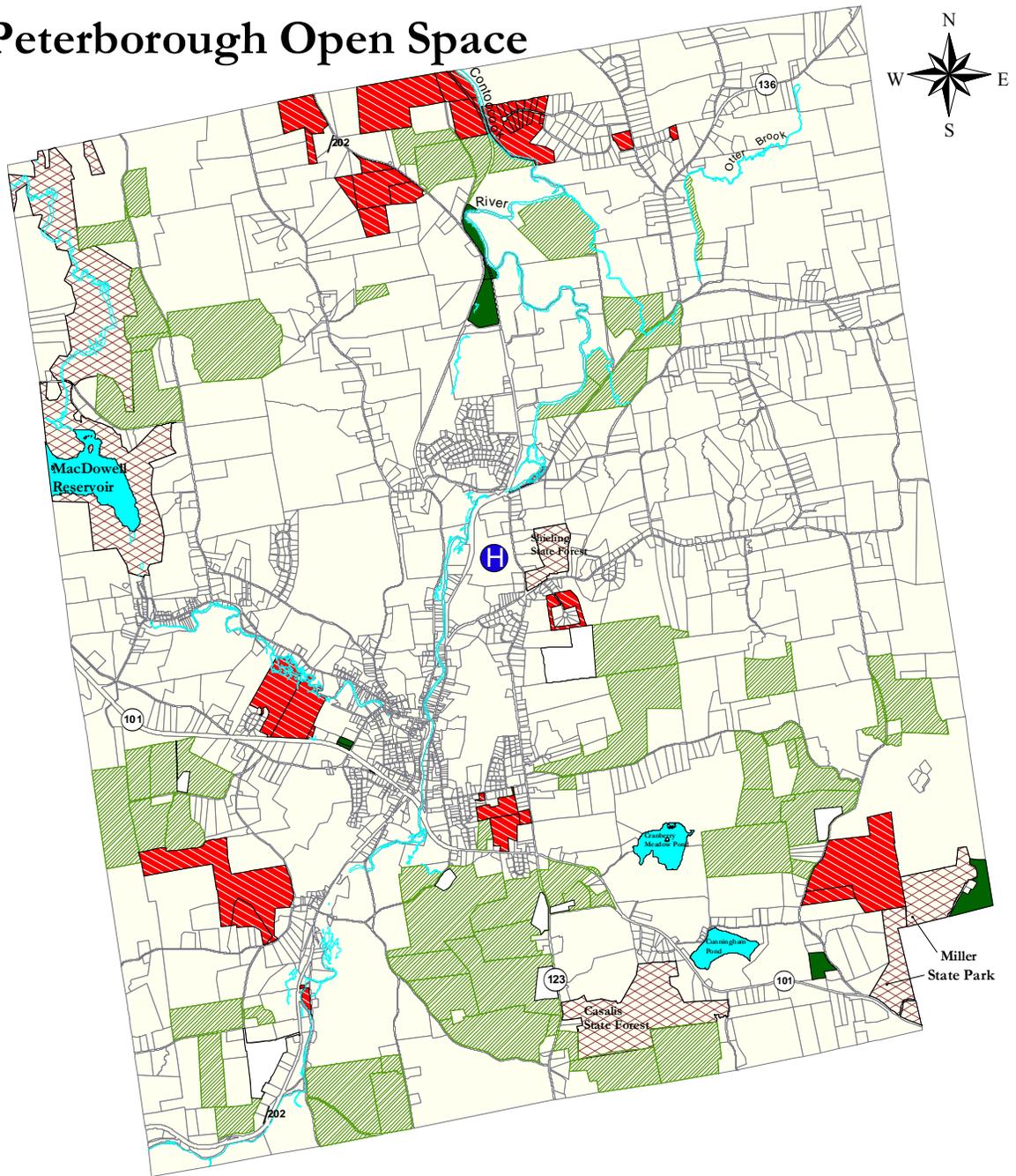
If a parcel is zoned general residence and multi-family, housing is being proposed; or if an applicant is building in the commercial or industrial zones of town, the Planning Board conducts a Site Plan Review. Issues such as buffers, landscaping, lighting, siting of buildings, and parking are addressed. By State law no such review takes place when a single-family residence is built on a subdivided lot.

XIV. Techniques of Land Conservation

❖ Conservation Easements

Private landowners who voluntarily chose to place a conservation easement on their land have protected most of Peterborough's conservation land. Conservation easements **permanently** restrict future development. These development restrictions can take many forms. A landowner might reserve the right to set aside potential house lots on the land or choose no future house lots. The landowner designs the restrictions. By law, a land trust or town conservation commission holds the easement and inspects the land annually to make sure the easement terms are being honored. Conservation easement donors are entitled to a federal income tax deduction equal to the appraised value of the development rights that were given up. The land remains private property subject to taxation and benefits the Town through protection of scenic and wildlife values and natural resources in general. Easements also can be purchased by the Town or by a land trust. The price typically is the appraised value of the development rights surrendered. In Peterborough, over the years, conservation easements have been donated by 34 landowners totaling about 2,850 acres.

Peterborough Open Space



Created by Peterborough
Office of Community
Development.
Data Sources: Town GIS
and Conservation Commission.

Legend

1:55000

0.8 0 0.8 1.6 Miles

1 0 1 2 3 Kilometers

-  Town Owned Open Space
-  Conservation Easements
-  State/Federal Owned
-  Other (Nonprofits)



❖ **Land Donation**

Shieling State Forest and the Town Beach land at Cunningham Pond are examples of open space lands donated by townspeople. Four generations of the Bass/Bross/Clement extended family have donated land and easements totaling almost 1,500 acres in Town, beginning with Adams Playground land in 1914. The family’s donated lands also include Casalis State Park, Miller State Park, and the Raymond Trail that leads to it. Most recently, family initiative led to the 500-acre Joanne Bass Bross Preserve on Pack Monadnock.

❖ **Neighborhood Initiative**

The Favre Field and neighborhood skating pond at Old Street Road and Cheney Avenue was purchased by neighbors and donated to the Town as conservation land. Neighbors “pass the hat” to cover annual mowing expenses for the 20-acre field.

❖ **Conservation Commission Initiative**

The Fremont Field was purchased through Conservation Commission fundraising in 1996, thereby adding access to back acreage that was secured by neighbors in 1991 with assistance from the State’s Land Conservation Investment Program (LCIP). The field recently was expanded through Town purchase of two abutting house lots when the Conservation Commission joined with the Peterborough Land Trust and neighbors to raise money to match funds voted at Town Meeting 2002.



Fremont Field

❖ **Bargain Sale**

Landowners who sell property to the Town or a to a non-profit land trust at less than the appraised market value are entitled to tax deductions equal to the difference. The Fremont Field expansion and Hall Property were bargain sales by willing landowners. Local land trusts like the Harris Center or Monadnock Conservancy are available to talk with landowners about the wide range of conservation options.

XV. Economics of Open Space

Land conservation favors the local economy in several ways: creating jobs, generating revenue, and slowing the rise in property taxes. As examples:

- A 1999 study commissioned by the Society for Protection of New Hampshire Forests¹ found that in 1996/1997, open space generated 25% of New Hampshire’s gross state product through activities such as forestry, tourism, hunting and fishing, recreation, vacation homes, and agriculture; 16% of its jobs; and 35% of its state and local taxes.
- Another example that open space lands are “tax friendly” – contributing more in taxes than they require in town services, can be found in a 1995 study commissioned by the Peterborough Conservation Commission². Residential development can be tax-negative, paying less in taxes than it receives in town services. Commercial development that creates new jobs can lead to increased residential development and increased wear and tear on the Town’s built infrastructure, especially its water, sewer, and roadway network.
- A 1995 study of all 234 towns in New Hampshire found that, in general, the towns with the most open space have the lowest property tax bills (Ad Hoc Associates, Salisbury, VT, for the Squam Lakes Association).



Forever-protected Old Orchard.

“**Current Use**”, whereby undeveloped land may be taxed according to its current use rather than its current market value, was enacted 30 years ago when “our mostly rural state was giving way to poorly-planned subdivisions, strip malls and roads,” said Walter Peterson, Governor at the time (1973). Governor Peterson further explained, “Contrary to popular notions, the average family with land in current use has below average median household income. Current use is the vital means by which they can afford to keep their lands.”

Current use designation does **not** protect land from development. Landowners choosing to take their land out of Current Use in order to develop it pay a Land Use Change Tax to the Town- 10% of the land’s current fair market value.

Studies show that this “penalty tax,” paid when property is taken out of Current Use, has brought New Hampshire towns more revenue than if the lands had been taxed *ad valorem* for the same period of time that they were taxed under Current Use.*

Of Peterborough’s 24,000 acres, 14,000 are taxed under the Current Use designation.

*D.E. Morris, *Town Incomes from the Land Use Change Tax, 1980-87* (UNH, Dept. of Resource Economics); C. Levesque, *Land Use Change Tax Incomes from Ten Selected New Hampshire Towns, 1988-1994*; and C. Belowski, *Income from the Land Use Change Tax for Seven New Hampshire Towns, 1995-2000*.

¹ Resource Systems Group, 1999. See Appendix; also available at www.spnhf.org. Note that since the data generated represent an overall state average, individual numbers may differ widely from town to town.

² See Appendix: Cost of Community Services Study, Peterborough Conservation Commission.

XVI. Appropriate Amount of Open Space

Almost 19% of Peterborough’s 24,000 acres can be classified as protected open space, from federally-owned MacDowell Reservoir lands to Town-owned conservation land to privately-owned conservation easement land; although, several of these properties lack legally binding development restrictions.

The answer to the question, “How much is enough?” is not an easy answer to deliver. New York City is 27% open space, indicating that percentages don’t necessarily tell the whole story.

A recent study by the Society for the Protection of New Hampshire Forests recommends a minimum of 25% protected land for towns in the State. Keene, in its Master Plan, set a goal of 50% protected land.

The Open Space Committee suggests that location of conservation land is more important than percentages. Location guidelines should be determined by resource protection criteria, whether that resource is a natural shoreline buffer, water body, forest, agricultural field, wildlife corridor, or trail. The larger the block of open space, the greater its conservation value.

XVII. Conclusion

Respondents to the Master Plan Survey confirmed the results of previous Town surveys. Eighty-two percent stated that preserving open space is “very important” or “important.” The Master Plan Vision and survey also support “same” to “slight growth” rate for the Town. The Open Space Survey and Master Plan visioning sessions confirmed the high value townspeople place on compact village development and rural character, surrounded by a natural landscape as a cherished community resource. Thus, preserving the “look and feel” of Peterborough remains a high priority for residents.

In support of this mandate, we recommend that the Town adopt zoning regulations that will further safeguard the Town’s natural resources and moderate its rate of growth; that the Town support the protection of an additional 1,500 acres through conservation easements and Town purchase to arrive at an immediate goal of 25% protected open space; and that the town formalize a permanent Open Space Committee to achieve these goals so that the “look and

feel” of Peterborough is preserved for future generations.



Ms. Kretchman’s 4th grade class at the Fremont Field Conservation Land.