
Groton Town Plan

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1. INTRODUCTION	3
1.1 The Purpose of Groton’s Plan.....	3
1.2 Statement of Goals and Objectives.....	4
1.3 Town Overview and History	6
2. LAND USE.....	8
2.1 Groton State Park and Groton State Forest.....	8
2.2 Fish and Wildlife Based Outdoor Opportunities.....	10
2.3 Nonindustrial Forestland.....	11
2.4 Agriculture	11
2.5 Flash Floods	12
2.6 Recreation	12
2.7 Land Attributes Influencing Future Development Patterns in Groton	14
2.8 Village Center Designation.....	18
2.9 Forest and Habitat Blocks.....	19
3. TRANSPORTATION	23
3.1 Highways.....	23
3.2 Planning Considerations	25
3.3 Airports and Rail.....	26
3.4 Alternative Transportation Plan	26
4. UTILITIES AND FACILITIES	30
4.1 Hospitals	30
4.2 Community Building.....	30
4.3 Fire Department.....	31
4.4 Town Garage.....	31
4.5 Education.....	31
4.6 Water and Wastewater	32
4.7 Cemeteries.....	34
4.8 Recreational Facilities.....	34
4.9 Police Protection.....	34
4.10 Emergency Planning	34
4.11 Solid Waste	35
4.12 Emergency Food Shelf	37
4.13 Library	37
4.14 Telecommunications	38

5. PRESERVATION.....	40
5.1 Historical Homes and Buildings.....	40
5.2 Natural Areas.....	42
6. EDUCATION.....	46
7. ENERGY.....	47
7.1 Home heating.....	47
7.2 Electricity	49
7.3. Transportation.....	50
8. HOUSING.....	53
8.1 Housing Zoning Districts.....	53
8.2 Affordable Housing.....	54
8.3 Future Housing Needs and Issues	55
9. ECONOMIC DEVELOPMENT.....	58
9.1 Groton’s Workforce.....	59
9.2 Employment Opportunities in Groton	61
9.4 Planning Considerations for Economic Development.....	62
10. FLOOD RESILIENCE.....	67
10.1 Existing Conditions.....	67
10.2 Flood Risks in Groton	67
10.3 Floodplains	68
10.4 Flood Hazard Regulations.....	69
10.5 River Corridors	69
10.6 Uplands and Wetlands	70
10.7 Emergency Relief and Assistance Fund	70
10.8 Local Emergency Operations Plan	71
10.9 Local Hazard Mitigation Plan	71
11. IMPLEMENTATION.....	74
12. ADJACENT TOWNS	76

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Photos: courtesy of Julie Oliver, Debra Johnson, Groton Library, and Groton Historical Society

1. INTRODUCTION

It still feels like small town America.
-- Groton Community Survey respondent

1.1 The Purpose of Groton's Plan

A town plan helps define a community in laying out a general direction for future development by identifying local needs and desires. Its primary purpose is to encourage appropriate development of land in a manner that will promote public health, safety, prosperity, efficiency, economy and general welfare of the town's citizens.

The spirit of this document is to enhance local control. It also encourages the most desirable and appropriate use of land, works to minimize the adverse impact of one land use upon another and reduces undesirable conditions. This document provides the conceptual framework for future zoning bylaws and subdivision regulations as well as other planning activities such as budgeting and capital improvements like water and wastewater infrastructure projects.

A town plan is intended as a policy document to be considered by the District Environmental Commission and the Natural Resources Board in their hearing under Act 250, the development law of the State of Vermont. The plan is also considered in applications for Certificates of Public Good under the Section 248 process. The plan is required to guide revisions to zoning and subdivision regulations, and is required for pursuit of non-regulatory measures, such as applying for Village Center Designation or Community Development Block Grant funds. This plan has been prepared in accordance with Title 24 VSA, Chapter 117, the statute that guides planning.

The task of the Planning Commission was to pull together information and write a document that reflects the vision and goals of the people who live in Groton. Adoption of a plan represents a community decision about the town's future character, its priorities for land use, conversation of physical resources, and the encouragement of well-considered, responsible development.

Groton Community Survey Results

The Groton Planning Commission solicited public input through a widely distributed Community Survey. There were 165 responses, although not all respondents answered every question. Highlights are featured throughout the plan, and a full report on responses is included in Appendix A.

What makes Groton a special place?

This question was open-ended, but the top three phrases most used to describe Groton were "Community," "Small Town", and "Family."

Rural Scenic Nice Privacy Lake Special Quiet Clean
Groton Land Small Town Love
Community Grew Family Residents
Friendly Woods Beautiful Landscape Peaceful
Growing Lots

A town plan must include the following elements pursuant to Title 24 VSA, Chapter 117, Section 4382:

1. A statement of objectives, policies and programs of the municipality to guide the future growth and development of land, public services and facilities, and to protect the environment (Section 1.2)
2. A land use plan, consisting of a map and statement of present and prospective land uses (Chapter 2);
3. A transportation plan, consisting of a map and statement of present and prospective transportation and circulation facilities (Chapter 3);
4. A utility and facility plan, consisting of a map and statement of present and prospective community facilities and public utilities (Chapter 4);
5. A statement of policies on the preservation of rare and irreplaceable natural areas, scenic and historic features and resources (Chapter 5);
6. An educational facilities plan consisting of a map and statement of present and projected uses and the local public school system (Chapter 6);
7. A recommended program for the implementation of the objectives of the development plan (Chapter 12);
8. A statement indicating how the plan relates to development trends and plans for adjacent municipalities, areas and the region (Chapter 11);
9. An energy plan, including an analysis of energy resources, needs, scarcities, costs and problems within the municipality; (Chapter 7)
10. A housing element that shall include a recommended program for addressing low and moderate income persons' housing needs (Chapter 8);
11. An economic development element that describes present economic conditions and the location, type and scale of desired economic development, and identifies policies, projects, and programs necessary to foster economic growth (Chapter 9); and
12. A flood resilience element that describes present economic conditions, and the location, type, and scale of desired economic development, and identifies policies, projects, and programs necessary to foster economic growth (Chapter 10).

Each section of the plan includes a brief synopsis of current trends, identifies issues and recommends actions to help guide the town's decisions. It attempts to identify the areas and resources which possess economic, historic, natural and scenic value and attempts to set reasonable priorities where two or more uses or values may conflict.

1.2 Statement of Goals and Objectives

Groton has a rich history of Yankee independence based on self-reliance and the Constitution of the State of Vermont. A strong sense of community has held the town together for generations and makes Groton different from other Vermont towns. Groton is small, where everyone knows and cares about each other. In order to concentrate municipal services and use our resources most efficiently, the primary emphasis of future policies should be to maintain the rural economy based

on the wise use of the natural resources of forests and farms, encouraging the growth in the village center.

In the future, those events that are important to fostering the community of Groton shall be encouraged. These include the chicken barbecues, the fall foliage festival, music in the park, the town picnic, holiday festivities, the summer growers' markets, the winter indoor markets and recreation activities in and around Groton State Forest.

The future development of Groton should be orderly and consistent and within the framework set forth by this document. The town's existing zoning bylaws shall be enforced equally and justly and shall be reviewed and amended as needed. Future bylaws and regulations shall be discussed in a public forum and shall represent the best interests of our town.

Planning Goals

1. Continue to review and update zoning bylaws to reflect the desired and planned development for Groton.
2. Improve the overall condition of the forests through landowner education and enforcement of existing guidelines.
3. Encourage development in the village center to foster a sense of community pride.
4. Maintain and enhance the number of farms and farmland.
5. Maintain and improve existing road network.
6. Encourage alternate forms of transportation such as carpooling.
7. Maintain the water quality found in Groton to ensure adequate and safe drinking water.
8. Ensure adequate and safe sewage disposal.
9. Maintain and improve Groton's municipally owned properties.
10. Recognize the important economic and social role recreation plays in Groton and build upon that.
11. Maintain and enhance the diversity of species found in Groton.
12. Recognize and preserve our scenic and natural areas.
13. Encourage new businesses and services that enhance the economic potential of our renewable natural resources, recognizing that tourism and recreation are economic resources.
14. Support public education and provide the necessary tools, programs and resources so that our teachers may provide our children with a high quality education.

If you could change ONE thing about Groton, what would it be?

This was an open-ended question, but responses that fell into the top FIVE categories were:

1. Need for beautification (18 responses): Examples include junk in yards, refuse.
2. More business and employment opportunities (18 responses): Multiple respondents called for more retail options.
3. More or better services (13 responses): Examples include streetlights, parking, recycling closer to town.
4. Lower taxes (12 responses)
5. More recreational and social opportunities in town (10 responses): Examples include ice skating, dances, family activities

15. Work with the surrounding communities to ensure consistent development within our region.
16. Promote a reduction in dependence upon non-renewable energy resources by encouraging conservation and the use of local, renewable energy resources.
17. Maintain a variety of housing options in Groton.
18. Maintain the historic character of Groton's buildings and visual integrity of the surrounding area.

1.3 Town Overview and History

(Adapted from *Groton State Forest History Guide*, Vermont Agency of Natural Resources)

Groton is a rural town located in the southwestern corner of Caledonia County. Our town is probably best known for the large area of public lands in Groton State Forest and for the large area of undeveloped forestland and lakeshore. But Groton is much more than a public recreational playground. We have a rich history of Yankee pride and independence of families cultivating the soil and reaping a harvest and of serving our country in public life and military service.

The Abenaki are known to have camped and hunted in Groton, although there is little record of their presence. Soldiers and explorers, often with Indian guides, also passed this way, using Groton as portage area between the Winooski and Connecticut Rivers.

When Groton was in a grove of towering trees, it was probably logged by early settlers. Maybe a poor immigrant tried and failed to farm the rocky soil typical of the forest. In the 1800's, Groton saw the dramatic rise and fall of the railroad and logging activities. But the tradition of camping along the ponds, begun in prehistoric times, has endured.

During the French and Indian Wars, Groton was visited by hunting bands of Indians and raiding parties of both English and French. As early as 1704, the area's network of ponds, brooks and rivers was the route the French and Indians used to carry over 100 captives from Deerfield, Massachusetts north to Canada.

Groton was a rugged wilderness then. Mountain lions, timberwolves and lynx roamed the hills. There were no permanent settlers in Groton until after the American Revolution. Veterans of that war, along with many ambitious youths from lower New England, moved to Vermont. These pioneers sought water and trails for transportation, land suitable for farming and available resources for building. Groton was settled early, being accessible to the Connecticut and Wells River.

Captain Edmund Morse, one of the first settlers of Groton, arrived in 1783. Morse built the town's first saw and grist mill on the outlet of what is now called Ricker Pond. A sawmill was in operation on this same site until the early 1960's. Captain Morse also built the first frame house and was the town's first blacksmith and military captain.

Chartered in 1789, Groton received its name because many of its settlers were from Groton, Massachusetts. The Massachusetts town had been named after Governor John Winthrop's mansion in England. This pattern of naming villages was prevalent in colonial times.

The land outside the village was left as "wild land," being too rocky to farm. This region was heavily forested with spruce, hemlock, beech, birch, maple and white pine. Local farmers cut the tree-

covered hillsides for fuel, lumber and the making of potash. Through the years, the main industry was logging. Sawmills operated at about twelve different sites in the town of Groton.

The Montpelier and Wells River Railroad, completed in November 1873, gave Groton's sawmills easy access to a wood-hungry market. Within a few years, new mills sprang up and old ones were enlarged to meet the demand for lumber. The railroad, a connection between the Central Vermont Railroad and the Boston and Maine system, was for many years the only access to the ponds.

The railroad opened the area to another kind of settler - the seasonal camper. The earliest camps along the shores of Groton Pond date to 1894. Within the next ten years it was an established practice for local Vermonters to spend July 4 to Labor Day by the pond. Camps were opened again in the late fall for hunting. Disembarking at either Lakeside Station or the Rocky Point Flag Stop, the campers would take a boat to their cabins on distant shores. Then, as now, swimming, boating, hiking, fishing and berry-picking were the main forms of recreation.

The State of Vermont bought its first tract of land here in 1919 and has continued to enlarge its holdings. Today, the state forest is 27,165 acres. The Civilian Conservation Corps (CCC), a government work program during the Great Depression of the 1930's was instrumental in park and campground development in Groton State Forest. The main forest road (Route 232) was started by the CCC. The Corps also planted trees and built hiking trails, picnic shelters and stone fireplaces.

In the early 20th century, Groton enjoyed an affluent but short-lived period of expansion due to the granite and woodworking industries. Granite mining increased the town size slightly and created a time of local prosperity, but in the 1940's, all the quarries had been abandoned because of the grade of granite.

Since World War II, farming, lumbering and granite quarrying have decreased or died away and Groton has become a residential town with many workers traveling to other towns to work.

2. LAND USE

It's where I grew up. It may be small, and there may not be a whole lot for the younger crowd, but it's a great place to live and I can't imagine living anywhere else.

Small community, availability of outdoor recreation.

-- Groton Community Survey respondents

2.1 Groton State Park and Groton State Forest

(Much of the text of this section was adapted from State of Vermont's Agency of Natural Resources (ANR) Long Range Management Plan of the Groton Management Unit dated August 2, 2008).

The Groton State Forest is a four season multi-use area. Recreational opportunities in the area are extensive, ranging from developed facilities and organized activities to dispersed recreational areas. Recreational uses in the Groton State Park and Forest include hiking, sightseeing, leaf peeping, biking, horseback riding, snowmobiling, cross-country skiing, snowshoeing, fishing, hunting, trapping, rock climbing, winter camping, primitive camping, metal detector use and geocaching. Weddings, family reunions, business picnics and documentary films have all also taken place in this recreational treasure.

The Groton State Park and Forest is just over an hour's drive from Chittenden County, the most densely populated area in Vermont, less than three hours from the Montreal metropolitan area and within a day's drive of more than 30 million people in southern New England and the Mid-Atlantic states. The accessibility of Groton State Forest and other state lands in this area to so many people will make this land area a popular destination in the future for Vermonters and out of state visitors alike.

The Agency of Natural Resource maintains a Long-Range Management Plan for Groton. The overall management goals and objectives of the plan are to:

- Protect biodiversity;
- Provide opportunities and manage for the continuation and enhancement of high-quality recreational experiences and activities (e.g. camping; water-based recreation; trail uses such as hiking, cross-country skiing, equestrian, snowmobiling, and mountain biking; nature study; and hunting, fishing, and trapping) and for other recreational activities; and
- Maintain the contribution of the forest to the local and regional economies.

While the plan remains in effect indefinitely (i.e. no end date), ANR recognizes the need to update, reevaluate, monitor, and adjust the plan based on future change. ANR intends to hold another series of public meetings within "a minimum of ten years" from the adoption date of the existing plan (2008) to assess the need for amendment. The most effective way to trigger such a meeting is for local leaders to collect input and questions from the general public and present them to ANR.

2.1.1 State Parks within Groton State Forest

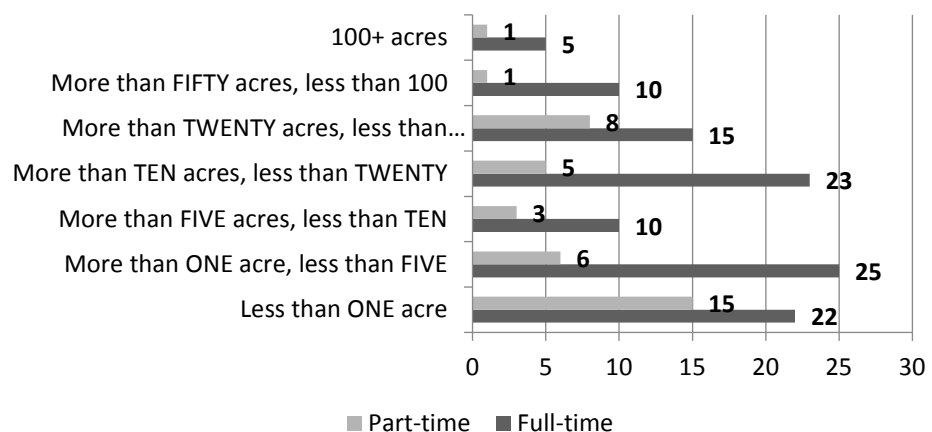
Within the 27,165 acres of the Groton State Forest is the largest concentration of state park facilities anywhere in Vermont. These include: Boulder Beach, Big Deer, Kettle Pond, New Discovery, Ricker Pond, Seyon Ranch and Stillwater.

There are also a number of other facilities managed by one of the state parks, including Osmore Pond Picnic Area, Owl's Head Lookout and the Groton Nature Center Overlook.

The state parks are staffed and operated for public enjoyment mainly from mid-May through Labor Day or Columbus Day. During the other times of the year, park lands and facilities are available for day use and camping; however, there are no bathrooms or water available, and visitors have to walk into the parks from the entrance gates.

The town should approach the state land managers to ask for reduced entrance fees or free access to the Groton State Parks and Forest lands for residents of Groton. The state provides a free season-pass to the Groton Public Library. The pass can be signed out for use by Groton residents. There is also the Green Mountain Passport for seniors, which allows free access to all state parks, state historic sites, and state-sponsored events programs. Passports may be purchased from the town clerk for a small fee.

Figure 2.1: If you own land in Groton, please indicate how many acres (from Community Survey)



2.1.2 Groton Nature Center

The Groton Nature Center is the interpretive area for the entire Groton State Forest. Programs are scheduled from mid-June to Labor Day throughout the forest and facility. There is one large Interpretive Center/Museum and a self-guided nature trail. The Nature Center parking lot is also the trailhead for trails throughout Groton State Forest. In the winter, the parking lot is plowed for skiers and snowshoers.

2.1.3 Lake Groton

Lake Groton (422 acres) is long and narrow in shape and lies in a north-south direction. It is approximately two-and-a-half miles in length, about a half mile wide. Lake Groton has a maximum depth of about 35 feet. The lake is popular for all types of water-based recreational activities and has two state parks and approximately 143 residences (camps and year-round homes) on its shoreline. The Town of Groton owns property adjacent to the dam at the south end of the lake.

2.1.4 Kettle Pond

Kettle Pond (109 acres) is in the northern portion of Groton State Forest close to VT Route 232. Kettle Pond is long and narrow in shape lying in an east-west direction.

2.1.5 Ricker Pond

Ricker Pond (95 acres) is in the central portion of Groton State Forest along VT Route 232 just south of Lake Groton. Ricker Pond State Park is on the western edge of the pond, which runs in a north-south direction.

2.1.6 Noyes Pond/Seyon Pond

Noyes Pond/Seyon Pond (39 acres) is located in the southern section of Groton State Forest at Seyon Ranch State Park. It is wholly within Groton State Forest, and the shores are mainly undeveloped except where the park facilities are located on the eastern shore of the pond.

2.2 Fish and Wildlife Based Outdoor Opportunities

Hunting, fishing and trapping are important outdoor activities, both culturally and economically in Vermont. These activities, in regulated seasons, provide for the sustainable utilization of fish and wildlife resources statewide. Currently 30% of Vermonters fish or hunt (over 86,000 hunters and trappers and 121,900 anglers). Research from 2002 indicates that Vermont is second only to Alaska in per capita participation by the public in hunting, fishing, trapping, feeding and observing wildlife.

Timber Resources

The Groton State Forest, with the exception of small acreages within the Butterfield and Marshfield blocks, has historically supported an uninterrupted flow of timber products. Aside from these two areas, the landscape is littered with cobbles and medium-to-large-size boulders, which makes agriculture next to impossible. As a result, the area has supported a continuous forest cover. In addition, the high cost of constructing access roads has largely restricted development, leaving large acreages of remote timberland. This forest has progressed through various cutting cycles over the past 200 years; the last period of large-scale, intensive harvesting ended in the early 1900's.

Wildlife Habitats and Species

The Groton State Park and Forest offers a wide spectrum of habitat types ranging from high elevation habitats on the summits of Butterfield (3,166 feet) and Signal Mountains (3,348 feet) to the wetlands associated with the Peacham Bog Natural Area. The diversity of habitat types has been identified through the natural community mapping process.

Cultural Resources

Due to the size of the Groton State Forest and the rich history of the area, the number of historical and cultural sites is large. They range from cellar holes and mill sites to the remnants of the Civilian Conservation Corps camp and their work.

Relationship to the Regional Context and Other Planning Efforts

Groton recognizes the value of the forestland. As a large public landholding in a region with increasing pressure from private development, the Groton State Forest fills a unique role in meeting the objectives of Groton's town plan. The Forest provides some key resources and experiences not found on private land. As lands bordering the Park and Forest continue to experience development, the forest will come under pressure to provide biodiversity, recreation and an economic stimulus to

the region. The property should be managed to maintain natural communities and water quality, to provide high quality wildlife habitat and forest products and, at the same time, provide a wide variety of recreational experiences.

2.3 Nonindustrial Forestland

The land area of Groton that is not included in the Groton State Forest is an important component of the town. Groton properties enrolled in the Vermont Current Use Program amount to 9,338 acres. Those and others not enrolled are an important economic multifaceted resource providing employment through the chain of timber extraction, recreation and tourism. Further, they are a source of clean water, carbon sequestration and a magnet for those who choose to live in a rural setting.

The former concerns about the impact of logging have been mostly resolved by logger education and information about Best Management Practices. Groton should consider incorporating the Best Management Practices into local zoning laws.

The town office should provide new landowners with information about forest management, consulting foresters and practices for maintaining water quality on logging jobs in Vermont. Residents also should be advised that they cannot cut trees in the rights of way of town roads without permission of the road commissioner and tree warden.

The “Boy Scout Land” which is about 13 acres at the south end of Lake Groton, was a Certified Tree Farm but has not been recertified for several years. It should be managed as a forest for recreation and selective timber extraction.

The Town of Groton purchased 67 acres on Welton Road to use as a source of gravel. Gravel can then be removed from another area of approximately five of the overall 67 acres. Once the gravel is exhausted from the five acre area, stumps can be deposited to refill the area. the original stump area can be leveled and replanted with trees. It will possibly be seeded by natural regeneration and then may be cleaned to desirable vegetation. This process can be ongoing: dig gravel, fill with stumps, level and replant. This will probably take years to accomplish, but eventually Groton will have a desirable area to utilize as a natural site, recreational site or multiple use area.

Earth extraction (excavation) in Groton that involves more than 1,000 square feet, is regulated in the Town’s Zoning Bylaw. Regulations require that excavation activities do not leave the existing grade in excess of one foot measured vertically for every two feet measured horizontally unless an approved vegetation ground cover or other soil stabilization technique is used. For other excavation activities, the Town relies on Act 250 review and directs the Natural Resources Board to consider such development in a way that minimizes adverse impacts to adjoining residential uses. Gravel should be stored and sited in a manner that does not impair wetlands and water resources. Truck traffic should not degrade our roads and daily truck traffic should not exceed the town’s ability to service such roads. Transport of earth materials should be done in a manner that minimizes dust.

2.4 Agriculture

Agriculture has traditionally played an important role in shaping the communities of Vermont. This was true in Groton, starting with subsistence farms of the first settlers. They were succeeded by sheep- and then dairy farms. Over the years, most of Groton’s dairy farms have ceased operating as is true with most of Vermont. The number of farms in Groton is currently three, but there is diversification in farming, and dairy no longer dominates. The 2016 NEK Food System Plan reports

that Caledonia County saw a net gain of 29 farms in the 2012 Census of Agriculture, and much of this gain is attributed to small farms under 50 acres. Although diversified production is not measured in the Census of Agriculture, there are numerous indicators of diversified production, such as an increase in the direct-to-consumer retail sales through community supported agriculture (CSAs), farmers' markets, and farm stands. These farming enterprises include maple production, beef and other animal production, as well as vegetable production. Groton also contains a meadery, which supports the processing and sale of locally raised honey. Just as other diversified types of agricultural practices have started in Groton, farm diversity should be encouraged. While traditional forms of "farming" are normally exempt from zoning, Groton amended its zoning bylaws to provide for integrated farming and agriculture-related ventures that are not typically exempt. These include farmstands where more than 50% of the produce is produced off the farm, tasting rooms, on-farm cafes, and on-farm processing.

2.5 Flash Floods

In the upper watershed areas of Groton, flash floods have become more frequent as more housing is constructed with consideration for water runoff. Groton is fortunate to have a well-trained road commissioner who learned to 1. clean the ditches, 2. clean the culverts, and 3. take care of the road, in that order. Groton's roads and bridges are maintained in accordance with the VTrans Road and Bridge Standards (aka the "Orange Book.") That training and experience has saved many a road from being washed out by a mini "flash flood."



Because Groton remains a rural community, care should be taken to inform new residents of the value of "water bars" on back roads. Many a road has been washed out in Groton by a citizen filling in a "water bar" to make the road smoother. All culverts in Groton are mapped, and it might be recommended that "water bars" be mapped as well. Construction of roads or driveways should be reviewed by the Road Commission to ensure that they are adequately sited to address water runoff management.

2.6 Recreation

Recreation in Groton is separated into six areas,

1. There is recreation in the Groton State Forest and on our various lakes and ponds. This is individual recreation not directed by the Town of Groton.
2. Blue Mountain School District is a recreational and sport haven for the students at the school, their parents and the community.
3. Recreation in the Village of Groton, which is primarily under the auspices of the Groton Recreation Committee.

4. There are also other recreational opportunities including a softball league, Tae-kwon-do and the snowmobile club, the Buckaroos of 302.
5. The Community Building is used for recreational activities and youth sports programs.
6. The rail bed of the Montpelier & Wells River Railroad now serves as part of the Vermont Cross Trail, a four-season, multi-use route for recreation and alternative transportation through northern central Vermont. When completed, the Vermont Cross Trail will run about 90 miles, connecting towns from Lake Champlain to the Connecticut River. While this ambitious endeavor is still a work in progress, Groton already contains the longest stretch of the trail, enhancing the town's reputation as a premier destination for recreation-based tourism. The rail bed has historic and cultural significance to Groton, and many residents currently enjoy it for dog walking, snowmobiling, hiking, cycling, and even horseback riding. Connectivity and wayfinding between the trail, the various state forest sites, and the Village Center, as well as visitor amenities (such as parking) are essential and should be given special planning consideration. It is also important that the Town actively maintains the portion of the rail bed, even though it is not actually a town road.

The mission of the Groton Recreation Committee is to serve the needs of the community through quality parks and facilities and by offering life-long learning and entertainment through recreational and cultural programs. The committee develops recreation programs, park/facility related projects, policies and the development of long-range planning for recreation and park needs of the community. It also works to increase public awareness of the existence and value of park and recreation opportunities in the town in a manner representing Groton citizens. The committee funds a variety of fitness activities in the Community Building, including yoga, Zumba, indoor hockey, bootcamp, and futsal (indoor soccer).

The annual Halloween Party transforms the town hall into a masquerade playground. Also, attendees for the caroling, cookie decorating and tree lighting enjoy the town's warmth even in mid winter. The annual Halloween celebration was not held in 2015, but the event came back in 2016 when an organizer came forward. The Recreation Committee contributed funds for the event, and donations were collected for Jazzy Children's Fund.

The Recreation Committee is always seeking ways to expand community participation and enhance



programming. The Groton Planning Commission applauds the efforts and accomplishments of the Recreation Committee and supports any grants or programs that will help them.

Groton has been a long-standing participant in the Northeast Kingdom Fall Foliage Festival, a weeklong celebration that has been held for more than a half-century. Seven communities – one for each day of the last week of September – host a myriad of events. Groton's celebration regularly falls on

the last day of the week and starts with the Lumberjack Breakfast at the Groton Methodist Church, followed by a book sale, tours of the Peter Paul house, an annual parade, the famous Chicken Pie Supper, and a hymn sing in the Baptist Church. The Chicken Pie Supper, a 60+ year tradition that has garnered national press in *Yankee Magazine*, and *Family Circle*, is a massive undertaking that requires more than 800 pounds of chicken, 300 pounds of potato, 400 pounds of a carefully guarded squash recipe, 52 pounds of gravy, and countless volunteers. With four seatings in the Community Building, the Supper feeds as many as 1,200 people annually.



Another form of recreation, in addition to hiking, walking, photography, bicycling, riding the back roads in/on various types of vehicles (all terrain vehicles, annual fall tractor parade on dirt roads) is hunting. Many who hunt take great pleasure in walking through the abundant forests in Groton. We encourage all hunters to ask permission to hunt on private property. No Trespassing signs are posted by landowners.

The Town of Groton takes great pleasure having a championship parade through town when the varsity players win. The local fire departments lead the parade through the local towns to the school.

2.7 Land Attributes Influencing Future Development Patterns in Groton

Of the 34,534 acres of land in town 14,223 acres are publicly held, accounting for about 41% of the land mass. The Town of Groton receives an annual Payment in Lieu of Taxes (PILOT) from the State of Vermont for its publicly owned lands. In 2015, the Town of Groton received \$54,511.85 in PILOT payments for state-owned land in Groton, which amounts to a total appraised value of \$2,242,700. In 2005, a study on the tax consequences on the towns that make up the Groton State Forest management area (Groton, Topsham, Marshfield, Orange, Peacham, and Plainfield) found that there was an increase in municipal tax rate resulting from an acquisition of lands for conservation, except when land was acquired by the Agency of Natural Resources. PILOT payments have a set threshold, meaning that the town is guaranteed a level of income regardless of what happens with the tax base. Additionally, much of the state-owned land remains in the Current Use Program, which results in reimbursement to the Town. (see Section 2.7.5) Nevertheless, many Groton residents view the State's acquisition of lands as lost revenue that is not sufficiently offset by the PILOT payments. The issue is complicated, and the Town strongly encourages maintaining a productive dialog with ANR to evaluate the impact on the Town's tax revenue.

Another commonly voiced sentiment in Groton is that with the large holding of state lands, there is little opportunity for development, especially intensive uses and developments with substantial regional impact. This section contains a description of the various factors (apart from publicly-held

lands) that may influence future development trends. Some are clearly regulatory, while others help to dissuade development in some areas, while directing it to others. ANR's Natural Resource Atlas provides geographic information about environmental features as well as sites that it manages, monitors, permits, or regulates. In addition to standard map navigation tools, this site links to documents where available, generates reports, exports search results, imports data, and prints PDF maps. This online tool can be found at <http://anrmaps.vermont.gov/websites/anra5/>.

Land use planning and regulations should consider the natural resources and development potential of the land. Every acre of land in Groton is different from another; some have great development potential, while others have less. Where possible, this plan provides approximate acreages of existing constraints. However, it is important to remember that these land attributes frequently overlap. The maps accompanying this plan (especially the natural resource constraints and soils maps), along with the ANR Natural Resources Atlas, provide better perspective of actual "net developable" lands in town.

2.7.1 Wetlands

Wetlands perform important functions in enhancing water quality, recharging groundwater and providing wildlife habitat. In recognition of their environmental importance, they are protected by the State of Vermont. There are about 815 acres of wetlands on public and privately held lands, accounting for 2.3% of Groton's land base. Of these acres, 457 acres are located on State-owned lands. All of these wetlands are considered "Class II wetlands," which according to state regulations require a buffer of 50 feet.

2.7.2 "Poor" Soils

These soils are characterized by multiple factors, such as poor drainage, a steep slope, and depth to bedrock. They are at best marginally suited for residential development that rely on on-site wastewater systems. The ANR Natural Resources Atlas identifies a class of soils as "hydric" which indicates marginal suitability for residential development.

USDA Natural Resource Conservation Service, which assign suitability ratings based on several factors breaks out Groton lands accordingly:

Table 2.1: Soil Classifications in Groton

Soil classification	Townwide, acres	State-Owned Lands, acres	State-Owned as % of Class Town-wide
Well Suited:	4,865	555	11.4%
Moderately Suited:	7,995	1,733	21.7%
Marginally Suited:	16,651	9,264	55.5%
Not Suited:	4,911	2,283	65.5%
Unrated:	797	109	13.7%

2.7.3 Floodplains

These lands are identified on Groton's FEMA Flood Insurance Rate Map (FIRM) and includes areas with a 1% chance of flooding in any given year. (See the Flood Resilience Chapter.) Under Groton's flood hazard regulations, development on these lands is not necessarily prohibited. However, development does need to be elevated (or in the case of non-residential development, floodproofed) to the base flood (i.e. the height the water is expected to reach in the event of an historically significant flood). Additionally, all development in the floodplain cannot collectively raise the base flood level by more than one foot. There are 2,066 acres of floodplain in Groton, which accounts

for about 5.9% of the town's land mass. Of the total floodplain area in Groton, 549 acres are located in the State-owned lands.

2.7.4 Deer Wintering Areas

Deer wintering areas are characterized by dense softwood cover – such as hemlock balsam fir, red spruce, and white pine – which limits snow depths, allowing deer to move more freely and seek protection from cold winds. Groton is mostly forested, and there are 7,412 acres of deer wintering areas in Groton, accounting for 21.4% of the town's land mass. Of the total deer wintering area, 409 acres are located in State-owned lands. Development of deer wintering areas is not prohibited per se; the Town's zoning regulations do not address this. However, the potential impact to deer wintering areas would be evaluated in Act 250 reviews. Considerations for the maintenance of deer wintering areas would also be incorporated into habitat management plans, such as for Current Use enrollment or the conveyance of conservation easements.

2.7.5 Current Use Enrollment

The Vermont Department of Taxes' Use Value Appraisal Program (also known as "Current Use") is a tax program designed to support the state's agriculture and forest products economy. It relieves the burden of property taxes on farmers by assessing taxes based on the productive agricultural or forestry value of the land rather than on the land's potential for development for other uses. While enrollment in current use does place a lien on the property which remains in place until the Land Use Change Tax is paid, it does NOT place a permanent deed restriction on the property like a conservation easement would. Rather, Current Use provides a financial incentive to the landowner to keep property undeveloped. More enrollment into the program does not shift the tax burden to other property owners in town. In fact, towns are reimbursed by the state, and the tax burden is spread equally across all taxpayers in the state. Studies of the cost of community services have repeatedly shown that open or forest land, even in current use, pays more in taxes than it requires in services.¹

As of 2016, there are 88 parcels containing lands enrolled in Current Use, amounting to a total of 9,338 acres (about 27% of the town's land mass). Nearly all of this land – 9,045 acres – is enrolled as forestry use. Land is occasionally taken out of the program. New parcel mapping standards may make it easier to track changes to local enrollment over time

2.7.6 Conservation Easements

The Vermont Land Trust holds more than 1,621 acres of conservation easements in Groton. Most conservation easements are sold to the Vermont Land Trust, although sometimes they are donated. Under such an arrangement, the property owner retains ownership of the property, but sells the "development rights," meaning that the owner cannot further develop or subdivide the land. Landowners with conservation easements still pay taxes on the property, so many lands with easements are often also enrolled in the Current Use Program to reduce their tax burden.

2.7.7 Steep Slopes

The development of steep slopes is not prohibited in Groton's zoning bylaw. Nevertheless, the presence of steep slopes creates challenges may create challenges for siting septic systems, as well as private rights of way that may erode or wash away onto downslope properties. The presence of

¹Trevor Evans, Northern Woodlands, November 22, 2010. "Debunking Misinformation about Vermont's Current Use Program" <http://northernwoodlands.org/articles/article/debunking-misinformation-about-vermonts-current-use-program>

steep slopes does not mean that a property is undevelopable. There may be other areas on the parcel that CAN be developed. About 65% of Groton's land mass contain slopes under 15% (i.e. 0 to 15%). The breakout of remaining slopes is broken out in the table below. About 4,507 acres of land with slopes of 20% or greater are located in State-held properties.

Table 2.2: Slopes in Groton

Slope	Acres	% of land mass
15% - 20%	4,958	14.3%
20% - 25%	3,882	11.2%
25%	3,703	10.7%

2.7.8 Zoning Bylaws

Zoning Groton's Zoning Bylaw, which have been in effect for nearly two decades, were most recently amended in 2012. The purpose of the Bylaw is to provide for orderly community growth and to further the goals, objectives and purposes established in the Municipal Plan and 24 VSA, §4302. The Bylaw attempts to achieve this orderly growth by promoting compact, dense, and varied development in the Village Area, and for commercial uses (light industrial, office, and warehouse uses) for approximately one mile west of the Village along Route 302. Density of development is established by minimum lot size (40,000 square feet and 40,000-80,000 square feet respectively). In reality, lot sizes may need to be larger in order to accommodate septic systems. Lots in the Conservation District (which consists entirely of state-lands) cannot be subdivided into lots smaller than 25 acres. Land within 500 feet of the mean water level of lakes and ponds, can be subdivided into lots as small as 40,000 square feet, but the range of uses that may be established there are largely limited to residential and hospitality uses (bed and breakfast, hotel), as well as accessory uses subordinate to residential uses. The balance of lands falls in the Rural District, which allows lots as small as 40,000 as well. The 2012 changes to the Zoning Bylaw were largely limited to updating provisions to meet Vermont statutory requirements.

2.7.9 Shoreland Regulations

In 2014, the State of Vermont enacted Shoreland Regulations that apply to most new development, redevelopment, or clearing of an area within 250 feet of the mean water level of lakes and ponds that are greater than 10 acres. Permits are required for such activities, and the regulations establish standards for limiting impervious surface coverage and maintaining natural vegetation cover to allow for filtration and minimize runoff. Water bodies in Groton subject to the Shoreland Regulations are:

- Lake Groton
- Kettle Pond
- Levi Pond
- Seyon Pond
- Pidgeon Pond
- Ricker Pond

Groton's Zoning Bylaw designates a Shoreland District for lands within 500 feet of the mean water level of all the above water bodies. While the State now regulates the impervious surface coverages within 250 feet from the mean water level, the Zoning Bylaw can regulate the density and dimensional standards of development (building height and building bulks, for example). The Bylaw

can also dictate what kinds of uses may be established there. The Town should continue to evaluate the efficacy of the Bylaws to ensure that state and local regulations work together.

2.8 Village Center Designation

The Zoning Bylaw (as does this Plan) supports compact residential development in the Village core, surrounded by open countryside. However actual development in Groton and the rest of the Northeast Kingdom tends to be incremental, focused on large-lot residential, and widely dispersed. A recent NVDA GIS analysis shows that over the past decade (2005-2014), **more than 95% of residential development in the NEK occurred outside of development centers** (areas characterized by compact settlement patterns and clusters of mixed uses).

While the lack of off-site water and sewer certainly inhibits compact dense development in Groton, continued disinvestment in village properties may be dissuading new development in the Village as well. Numerous respondents to the Groton Community Survey cited concerns with neglected properties in the Village. Village Center Designation may help to incite a reversal of that trend.

The Division of Community Planning and Revitalization within Vermont's Department of Housing and Community Development oversees this State designation program. With designation comes numerous benefits, including tax credits, loans, and grants from various state agencies. Tax credits are available to the owners of income-producing properties built before 1983 for historic rehabilitations, façade improvements, and code improvements (including installation of elevators and sprinkler systems). Benefits to the Town of Groton also include priority consideration for Municipal Planning Grants and funding from Vermont's Community Development Program, and priority consideration by the State Building and General Services when leasing or constructing buildings.

Although tax credits are awarded on a competitive basis (about \$2.2 million statewide each year), the credits can be easily obtained, administered, and even sold by private property owners. (Banks and insurance companies can purchase the tax credits for about 90 cents on the dollar).

Designation is not a regulatory program. Once conferred, it is good for five years. It is in the town's best interest to explore designation to assure all benefits of this designation are recognized and implemented.

Goals

- To plan development so as to maintain the historic settlement pattern of compact village and urban centers separated by rural countryside.
- To maintain and improve the quality of air, water, wildlife, and land resources.
- To maintain and enhance recreational opportunities for Vermont residents and visitors.
- To encourage and strengthen agricultural and forest industries.
- To provide for the wise and efficient use of natural resources and to facilitate the appropriate extraction of earth resources and the proper restoration and preservation of the aesthetic qualities of the area.

2.9 Forest and Habitat Blocks

Habitat blocks are areas of contiguous forest and other natural habitats that are unfragmented by roads, development, or agriculture. Vermont's habitat blocks are primarily forests, but also include wetlands, rivers and streams, lakes and ponds, cliffs, and rock outcrops. Forests included in habitat blocks may be young, early-successional strands, actively managed forests, or mature forests with little or no recent logging activity. The defining factor is that there is little or no permanent habitat fragmentation from roads or other forms of development within a habitat block.

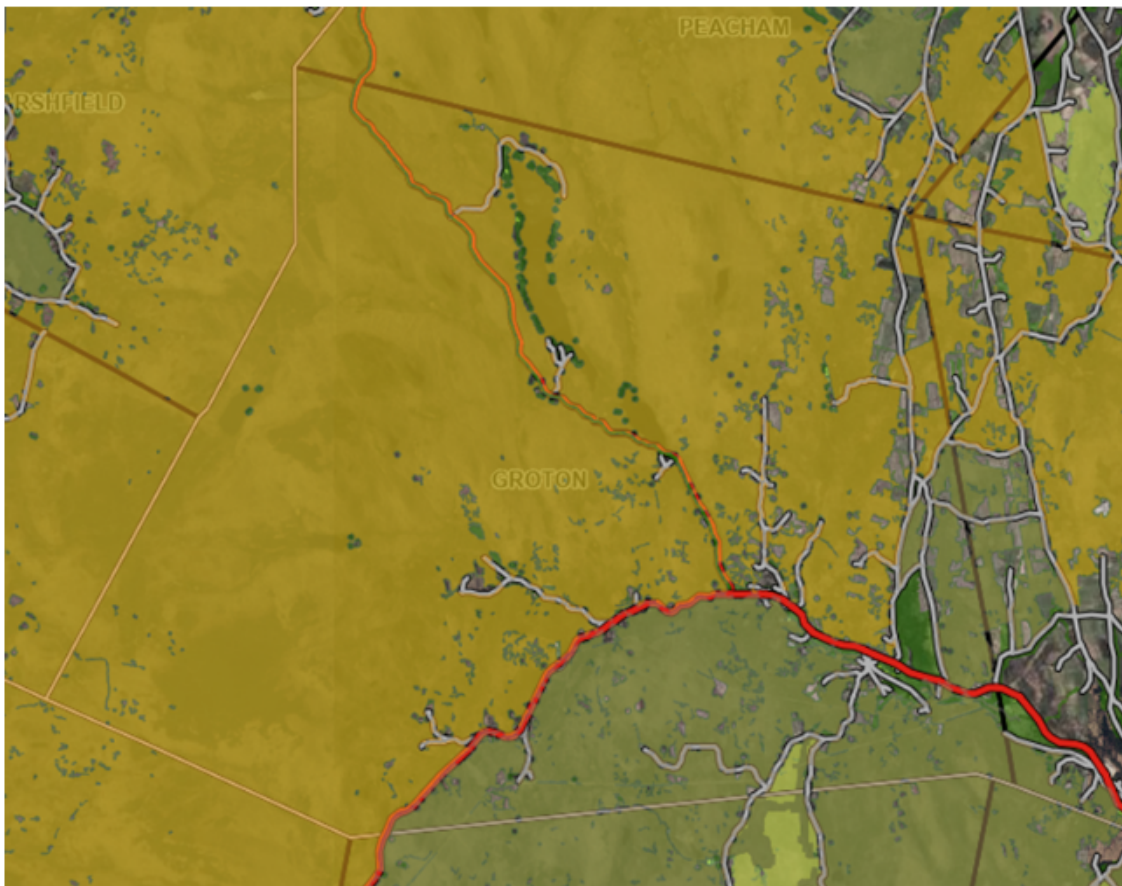


Figure 2.9.1: Habitat Blocks and Wildlife Corridor Map of Groton

In 2018, Act 171 was passed by State legislation, which requires town plans to identify important areas of forest blocks and habitat connectors and plan for land development in those areas to minimize forest fragmentation and promote the health, viability, and ecological function of forests. The Agency of Natural Resources' (ANR) "Biofinder" mapping tool provides critical insight into the ecological function of unfragmented forest blocks, which provide core habitat as well as vital connectivity to larger forest blocks beyond town boundaries. The map shown above in Figure 2.9.1 is from a statewide representation of all habitat blocks larger than 20 acres, as derived from NOAA Coastal Change Analysis Program (CCAP 2006 Era Land Cover Data and ancillary data (Vermont roads and E911, etc).

Beyond just being a town that contains a lot of forested habitat, a majority of the forested land in Groton is considered Highest Priority Interior Forest Blocks as shown in Figure 2.9.2 below. These are forested areas that contain the least amount of development and are the most unfragmented from roads or agriculture. A majority of Groton's interior forest blocks and connectivity blocks are located within the Groton State forest.

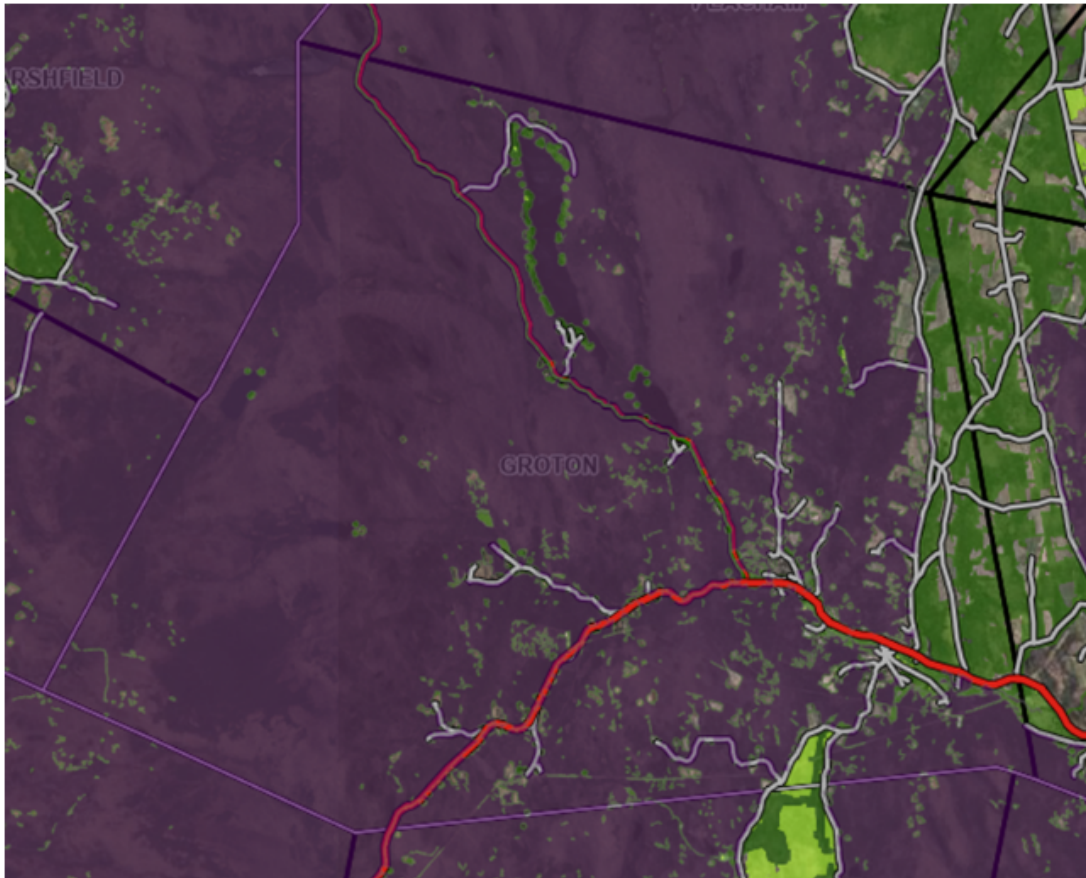


Figure 2.9.2: Map of Highest Priority Interior Forest Blocks

The forested landscape is important to the Town of Groton, environmentally, economically, and culturally. The Town recognizes the importance of providing a natural ecosystem that has a wealth of biodiversity, space for animal habitats and migration, and be a vital source of carbon sequestration in the adaptation of climate change. Economically, the forestry and outdoor recreation industries rely on a healthy forested ecosystem. Finally, it is a part of Groton's values and identity to continue to be a community that cherishes its forests.

Goal

- Encourage the protection of our most valuable natural areas in town including priority interior forest blocks and wildlife corridors.

Planning Policies

- The Town of Groton is committed to enforcing its existing bylaws and supporting the Zoning Administrator's actions. To maintain bylaws that are effective, the Town, aided by the Planning Commission and the Selectboard, shall periodically review the bylaws and revise as necessary to make sure that they reflect the current needs and desires of the Town. Special consideration will be given to existing natural resource constraints, the ongoing viability of agriculture and forestry practices, and the enterprises that support agriculture and forestry.
- The Town supports the implementation of Best Management Practices (BMPs) in forestry, which have been shown to protect water quality, soil structure, and site nutrients from the effects of logging. The Town supports the integration of BMPs into timber extraction in the Town's non-industrial forestland. This is best achieved through ongoing enrollment in the Use Value Appraisal Program (Current Use) as well as through education and outreach of organizations such as the Natural Resources Conservation District.
- The Town values the longstanding role of agriculture in Groton and supports its ongoing viability through the use of conservation easements and enrollment in the Current Use program.
- Small scale processors and value-added producers contribute to the ongoing vitality of farming and forestry and should continue to be appropriately sited through the Town's Zoning Bylaws.

Recommended strategies

Strategy	Timeframe	Responsible Parties	Resources
Explore and pursue Village Center Designation.	Short-term (1 - 2 years)	Selectboard, Planning Commission	Vt Village Center Program, NVDA
Advocate for connectivity between the Cross Vermont Trail and state-owned lands	Short-term (1-2 years)	Selectboard, Planning Commission	ANR
Explore and enlist appropriate planning and technical assistance resources to establish long-term linkage between the Cross Vermont Trail to the Village and surrounding areas	Near-Term (2 to 5 years)	Selectboard, Planning Commission	NVDA, State of Vermont Village Center Designation Program, Better Connections, VTrans
Ensure that Groton's needs and desires are reflected in the state's planning for Groton State Park and Forest.	Near-Term (2 to 5 years)	Selectboard, Planning Commission, with input from general public	NVDA
Complete a build-out analysis either town wide or in selected areas to identify the extent of	Long-term (5 – 8 years)	Planning Commission	NVDA, Municipal Planning Grant Program

development constraints.			
Encourage a community garden for town residents.	Long-term (5 – 8 years)	Planning Commission Recreation Committee	Vermont Community Garden Network, Green Mountain Farm-to-School, SASH, Community Club
Review current use of the stump dump, and change as required.	Ongoing	Selectboard	

3. TRANSPORTATION

3.1 Highways

The Town Highway Department services the approximately 39+ miles of town road in Groton. Numbered state highways are maintained by the District #7 Highway Garage in St. Johnsbury with personnel located at the Wells River garage on VT Route 302. The day-to-day operation of the Town Highway Department is the responsibility of the Road Commissioner, an elected official for the Town of Groton. The Highway Department budget is overseen by the Selectboard.

The Town may, at the discretion of the Selectboard, accept new roads into its care only when constructed according to town standards approved April 5, 2001.

The Town Highway Department maintains 6.87 miles of paved roads and 32 miles of dirt roads.

Highways are identified according to their functional classification (major arterial, minor arterial, collector, local street) and according to the state's town highway classification system. The functional classification illustrates the functional roles of highways within the community, whether they are to move people and goods across municipal boundaries or to provide access to residential areas. Communities can use these classifications to plan for future land use. The state classification system, defined in Title 19 VSA, Section 302, primarily refers to highway conditions. This system is the basis by which the state allocates highway aid for municipalities. The classes are:

Table 3.1: CLASSIFICATION OF TOWN HIGHWAYS

U.S./State Highways	Highways maintained exclusively by the Agency of Transportation: US Route 302 and VT 232. *	15.08 miles***
Class #1	Town highways which form the extension of a state highway route and which carry a state highway route number. ** Examples include State Highways that run through village centers. Municipalities must assume responsibility for drainage along all Class 1 roads. There are no Class 1 roads in Groton.	0 miles
Class #2	Town highways selected as the most important highways in each town. As far as practicable they shall be selected with the purposes of securing trunk lines of improved highways from town to town and to places which by their nature have more than normal amount of traffic. These roads are town maintained with state aid.	6.87 miles
Class #3	All traveled town highways other than class 1 or 2 highways. These roads are town maintained with state aid.	24.12 miles
Class #4	Town highways that are not class 1, 2, or 3 town highways or unidentified corridors. Some of these roads are actively maintained by the town.	10.63 miles
"Not up to standard	Town highways that are legally considered class 3 highways, but are deemed not up to standard and are functionally class 4	.10 miles
Trails	Trails are not considered highways and the town shall not be liable for their construction, maintenance, repair or safety. *	Various

*State highway description from Title 19 VSA, Chapter 1: State Highway Law, Section 1:

Definitions. ** Road class descriptions are from Title 19 VSA, Chapter 3: Town Highways, Section 302: Classification of Town Highways. ***Mileages come from the 2015 Groton Highways Map, published by VTrans

3.1.1 Maintenance Considerations

Groton receives an appropriation from the state to pay for the maintenance of town highways. This appropriation does not require a match, as long as the municipality spends at least \$300 per mile of local tax revenues on its highways. The appropriation is based on the mileage and classification of roads. State grant funds are available for repairs and replacement of bridges and culverts on town highways (Classes 1 through 3). The state share is limited to \$175,000 per project. The local share is 20% of the project cost, unless the municipality has done the following

- Adopted the current VTrans Road and Bridge Standards
- Conducted a highway infrastructure study (not less than three years old) which identifies all town culverts, bridges, and identified road problems. The inventory would include location, size, deficiency/condition, and estimated cost of repair –where the condition is less than acceptable (such as “Fair,” “Poor,” or “Critical”).

If both requirements are met, the local share of the project cost drops to 10%. The Town of Groton meets both requirements.

The Town of Groton’s Road Commissioner has done a thorough job of maintaining an inventory of the town’s road infrastructure on Vermont’s online bridge and culvert inventory tool (www.vtculverts.org) The online inventory identifies 8 bridges and 18 large culverts (with a diameter of 60” or larger), along with 423 other smaller culverts. The Road Commissioner, along with NVDA, continues to assess all culverts and bridges with proposed replacement and rehabilitation to be scheduled with the Vermont Department of Transportation. Due to the funding structure, municipalities must participate in the regional Transportation Advisory Committee (TAC) to be placed on the priority list, which is reviewed yearly, in order to obtain funding from the bridge and culvert program. The Road Commissioner is currently active in this program.

Storm drainage is maintained by the Town Highway Department.

The Highway Department has a capital fund for replacement of vehicles. This fund was established by the voters in March of 1992 with a plan to address future purchases. The budget for the Highway Department is influenced by climate and the costs of fuel and preventive maintenance, all of which are volatile.

The town must evaluate Groton highways for their safety conditions, surface conditions and capacity to handle actual traffic volumes during both average and peak periods. The adequacy of the service they provide to land use within the municipality and the region must be carefully considered and the appropriate actions taken. The Vermont Local Roads Program, located at St. Michael's College in Colchester, provides technical assistance to Vermont municipalities on a wide variety of highway-related issues.

A map of Groton’s roads can be found in the Appendix.

3.2 Planning Considerations

3.2.1 Zoning

In order to achieve the goals of a safe highway system, the zoning bylaws must establish regulations regarding access to lots, driveways and parking and loading areas. In addition, the regulations governing conditional uses must be carefully written so as to significantly reduce any negative impacts on traffic flow and safety. The Town of Groton's Zoning Bylaws, which were last revised in 2012, require a minimum number of off-street parking spaces for specific uses in either new or expanded structures. Off-street parking can be located on another lot, provided that it is not more than 400 feet from the entrance of the building. This arrangement may provide some flexibility for accommodating new uses in Groton Village, where off-street parking is limited. The Zoning Bylaws also require one loading area for every 7,500 square feet of wholesale and shipping uses, and one loading area for every 10,000 square feet of other commercial uses.

3.2.2 "Complete Streets" (Act 34)

In 2011, Vermont's "Complete Streets" bill was signed into law. The legislation is based on a concept that state and town streets, roads and highways should safely accommodate all transportation system users, regardless of age, ability, or mode of transportation they prefer – walking, biking, driving, or use of transit. Typical elements of a "complete street" include sidewalks, bike lanes, or wide paved shoulders. The purpose of the Complete Streets bill is to ensure that the needs of all transportation system users are considered in all state and municipally managed transportation projects and project phases, including planning, development, construction, and maintenance, except in the case of projects or project components involving unpaved highways. The policy applies when new roads are being constructed, and when paved roads are being reconstructed, rehabilitated, or otherwise maintained. (However, it is important to note that the bill is NOT a mandate to retrofit existing roads. In some instances, "complete street" principles may not be feasible because the cost of retrofit may be disproportionate to the need or use.)

3.2.3 Act 64, the Clean Water Act

Research shows that roads are responsible for 6-10% of phosphorus loads to Lake Champlain, and other waterways, and roads contribute over 10% of sediment loads. Excessive sediment and phosphorus can cause algae blooms, increase water turbidity (cloudiness), and degrade fish and invertebrate habitat. Act 64, passed by the legislature in 2015, represents sweeping legislation aimed to improve water quality. An important component of this legislation is a new regulatory framework addressing all work on town highways, known as "The Municipal Roads General Permit (MRPG)." This general permit is intended to reduce stormwater-related erosion from municipal roads, both paved and unpaved. Under this legislation, municipalities will have to develop and implement a customized, multi-year plan to stabilize their road drainage system. The plan will include bringing road drainage systems up to basic maintenance standards, and additional corrective measures to reduce erosion. The plan will be based on a comprehensive inventory of the road network that identifies priority road segments that are connected to surface waters through ditches, culverts or other drainage structures. Fortunately, Groton is well suited for compliance with the MRGP, as a Road Erosion Inventory was completed in 2015. This inventory will continue to be updated as projects are completed. The Town of Groton can apply for funding through the Better Back Roads Program for carrying out projects identified in the plan. Also, technical assistance is available through the County Conservation District, VTrans Maintenance District, Vermont Local Roads, and NVDA.

3.2.4 “Short Structures”

VTrans is required to inspect all bridges with a span of 20 feet or longer, whether they are located on a federal-aid system or a town highway. These inspections occur once every two years, and reports of the inspections are sent to the Town. The bridge and culvert inventory does not, however, contain information on town highway “short structures,” which are bridges with a span of less than 20 feet but equal to or greater than 6 feet. These are neither inspected nor prioritized by the state, and no formal system for identifying or assessing them has existed. In fact, short structures have not even been depicted on the Town Highways Maps since 2003. Towns are responsible for the inspection of their own short structures. In 2015, NVDA began facilitating condition assessments on town short structures, classifying them as “Good,” “Fair,” or “Poor.” The Town of Groton “shorts” were recently evaluated (2016), and the condition information is being added to the online bridge and culvert inventory. This information will provide valuable guidance for long-range capital budgeting and planning.

3.3 Airports and Rail

There are no airports in the community, but there are emergency landing pads for the Dartmouth-Hitchcock Advanced Response Team (DHART) at Puffer Field and adjacent to Clark’s Landing. The Clark’s Landing site is maintained year-round for transport to Dartmouth Hitchcock Hospital. The closest airports for commercial flight are in Burlington and Manchester, New Hampshire.

There is no rail service. The nearest passenger service available is AMTRAK with stations in Waterbury, Montpelier and White River Junction.

3.4 Alternative Transportation Plan

A recreational trail, the Cross Vermont Trail, follows the old railroad bed through Groton from Wells River past Marshfield. The trail is guided by the Cross Vermont Trail Association, Inc., which works with municipalities, recreation groups and landowners in the creation and management of a four-season, multi-use trail across the state for public recreation, alternative transportation and awareness of our natural and cultural heritage. When complete, the trail will run from Vermont’s western border on Lake Champlain to its eastern border in the Village of Wells River on the Connecticut River.

There is a Park and Ride parking lot at the P & H Truck Stop in Wells River. However, while there may be other places along VT Route 302 that could be used for this purpose, there are no other formally established lots. During the winter months the parking lot at the Upper Valley Grill may be used to park snowmobiles. Future locations for town Park and Ride facilities, such as the parking lot for the Community Building should be explored.

There are pedestrian facilities along the railroad bed, and there are facilities in the State Forest for camping, hiking, fishing, swimming, boating, walking and biking. Winter activities in these areas include snowmobiling, cross country skiing and snowshoeing.

3.4.1 Sidewalks

Year-round sidewalks provide safe routes for pedestrians in neighborhoods, commercial and industrial areas and community centers. Communities should map all sidewalks and evaluate their conditions. Sidewalks that need improvements or extensions should be identified. Areas not served by sidewalks but needing them should also be identified. The Town of Groton currently has grant

funds to continue an ADA-compliant sidewalk from the library to across from the intersection with Powder Springs Road. The Town has had plans to establish an ADA compliant crossing from the end of the sidewalk to Powder Springs Road, but these plans will require approval from the State of Vermont since Route 302 is a State Highway.

3.4.2 Traffic Calming

There are many ways to handle roadway design, traffic congestion, vehicular speeds, bicycle and pedestrian safety. There is a toolbox of practices and designs commonly referred to as “traffic calming” techniques.

- Street width reduction through bump-outs, bulb-outs and reducing lane width
- Street trees to soften the edge and protect the pedestrian
- Landscaped median strips
- Roundabouts, mini-roundabouts
- Street side parking
- Sidewalks, bike lanes
- Rumble strips, elevated speed table (speed bumps)
- Change in pavement color and texture, signage
- Community gateway
- Crosswalks with signage
- Radar activated speed signs

3.4.3 Public Transportation

Groton presently has public transportation provided on a demand response system utilizing lift equipped vehicles, volunteer drivers and car pooling.

Rural Community Transportation, Inc. (www.riderct.com) is the agent for providing transportation services to the elderly and disabled, Medicaid eligible residents, community organizations and service programs, schools and general public.

Public transportation provided in Groton is based on individual needs utilizing state and federal funding resources. Groton contributes the local match in the budget as required in order to receive the state and federal funds to provide the service. The volunteer program through Rural Community Transportation, Inc. is based purely on people’s needs and is provided by volunteer drivers, often in their own vehicles. This is, therefore, the least expensive means of providing public transportation. However, improvements are required if community’s demands for transportation are to be met.

Goals:

- To provide a safe, convenient, economic and energy efficient transportation network, which utilizes a variety of modes and is maintained in a cost-effective manner.
- Balance the needs of other transportation (pedestrian amenities, cycling, carpooling, etc.) into the planning process.

Planning Policies

- Future growth in Groton should occur in areas, and under such conditions, that the demand for increased transportation services will not significantly affect the tax burden for residents.
- The Town shall continue to enforce regulations and standards for developers who wish to build roads to be maintained by the town.
- New road construction, whether public or private, must meet town road standards. Zoning bylaws must establish regulations regarding access to lots, driveways and parking and loading areas. In addition, the regulations governing conditional uses must be carefully written so as to significantly reduce any negative impacts on traffic flow and safety.
- Review and subsequent updates of the Town's Zoning Bylaws will give due regard to traffic flow and safety.
- The Town will maintain communications with regional providers of services such as rail, air, and transit.
- The Town's sidewalks shall provide safe routes for pedestrians in neighborhoods, commercial and industrial areas and community centers.
- The Town shall explore and pursue traffic calming strategies that enhance safety and human experience in neighborhoods, along Main Street, along the town's country roads and in the community in general.
- Pedestrian and non-vehicular transportation networks must be safe and conveniently located to encourage use.
- Encourage the use, development and support of public transportation through the coordination, consolidation and elimination of duplicate transportation services.
- Encourage use of public transportation to reduce congestion and air pollution and to protect the environment.
- All town rights of way should be signed as such for recognition and use by residents.
- Establish and promote park and rides, safe walking trails, safe sidewalks, pedestrian facilities, and bicycle trails and in-town usage of bikes and recreational facilities.
- The Town shall continue to identify existing and potential transportation enhancement projects in areas of need.
- The Town shall continue to identify carpool commuter routes; identify needs for special and general public services to design future transportation routes; and leverage resources, which encourage use of public transportation.

Recommended Strategies:

Strategy	Timeframe	Responsible Parties	Resources
Add a crosswalk on Main Street and Powder Spring Road.	Short-term (1 - 2 years)	Road Foreman, Selectboard	VTrans, NVDA
Explore the possibility of establishing a ride sharing site, especially on the parking lot of the	Near Term (2 to 5 years)	Selectboard	VTrans (Municipal Park and Ride Program)

Community Building			
Establish an EV charging station in a public location	Near Term (2 to 5 years)	Selectboard	VTrans
Identify and develop traffic calming techniques and crosswalks in the Village across Route 302. Work with the State Agency of Transportation to implement these changes.	Long-term (5 - 8 years)	Road Foreman, Selectboard	NVDA, VTrans
Support the Town Highway Department in its ongoing analysis of equipment needs and personnel requirements, taking into account future population growth.	Ongoing	Road Foreman, Selectboard	NVDA, Better Backroads, VTrans
Evaluate town highways for safety conditions, surface conditions, capacity to handle traffic and volume.	Ongoing	Road Foreman, Selectboard	NVDA (road studies, traffic counts), VTrans
Ensure that the rail bed (as part of the Vermont Cross Trail) is appropriately signed.	Ongoing	Vermont Cross Trail Association Road Foreman, Selectboard	

4. UTILITIES AND FACILITIES

About Groton:

It is a welcoming community with lots going on. I especially appreciate the library and the Groton Forest recreation.

It's people and how willing they are to help out when you need them.

-- Groton Community Survey respondents

4.1 Hospitals

Groton is served by Cottage Hospital in Woodsville, New Hampshire (www.cottagehospital.org), Central Vermont Medical Center in Berlin, Vermont (www.cvmc.hitchcock.org), Northeastern Vermont Regional Hospital in St. Johnsbury, Vermont (www.nvrh.org) and Dartmouth-Hitchcock Hospital in Lebanon, New Hampshire (www.dhmc.org). Both Groton and Ryegate receive services from the Fast Squad, and ambulance services are provided by the Woodsville New Hampshire Fire Department.

4.2 Community Building

All Town-owned buildings are collectively assessed at \$459,000. The largest of these holdings is the Community Building is a combination of town offices, vault and town hall. It is currently valued at \$242,600 and land at \$17,100. The town offices are used for day-to-day municipal functions, and the community building is used for voting, chicken pie suppers, the Groton Growers Market, and increasingly for other town and public events (such as the weekly yoga classes). The Community Building is immediately adjacent to the Emergency Services Building (Fire Station).

Extensive improvements to the structure date back to 2006, when the town employed the engineering firm of SVE Associates of Montpelier to assess the structural condition of the Community Building and Emergency Services Building (Fire Station). In 2011, the Town completed extensive accessibility improvements to the building, including retrofit of a town office bathroom, the construction of two new accessible bathrooms to the rear of the gymnasium, and a new exterior ramp and doorways. The project was completed with a Vermont Community Development Program Grant (VCDP) (accessibility grant) in the amount of \$50,000, a \$17,000 grant from USDA Rural Development, and a \$5,000 grant from the Help America Vote Act. The balance of funds came from \$43,000 in reserve funds for the buildings.

Budgeted repairs for the Community Building and Emergency Services Building (Fire Station) are just over \$1,500 combined. Utilities and fuel are around \$10,000 and \$4,300 respectively. Last year saw the completion of significant work to roof to reinforce it and bring insulation to the optimum level, which should lower heating costs. Improvements were also made to the gym floor. Efforts are underway to build a “memory wall” along the steep slope behind the structure.

The Community Building Improvement Fund was established in 2005 to set up a reserve fund to finance future upgrades and improvements. Monies from this fund are exclusively designated for

improvements and upgrades. The balance of this fund is currently \$12,156. The Emergency Services Building also has a reserve fund. Improvements include, but are not limited to heating plan, electrical, insulations, painting, door replacement, generator installation, and plumbing. The current balance is \$47,600.

In 2015, the Groton Selectboard established the Community and Economic Development Committee, which succeeds the Community Building Committee. The group's responsibility is to manage all town buildings, facilities, and structures. It also works with department heads to establish a budget for maintenance and upkeep of facilities. Priorities for the Community Building include upgrades to the sewer (including replacement of a broken line) and energy efficiency upgrades. The Town would also like to do extensive work to the kitchen (in the basement level of the Community Building) using grant funds if possible. Some grant funding sources (such as VCDP) require a current Town Plan. Additionally, priority consideration may be given to facilities that are located within designated village centers.

4.3 Fire Department

The current Fire Station (mentioned above under discussion) is evaluated at \$63,400 and land valued at \$18,900. Other fire equipment is valued at \$578,320. The Fire Department maintains four dry hydrants for the benefit of the town.



4.4 Town Garage

The town garage on Scott Highway was built in 2009. The current town garage, as well as the former town garage building, are valued at \$123,700 collectively. The land is valued at \$32,600. The total equipment value is \$440,900. The old town garage is now serving as the salt shed. Improvements to the facility are planned.

4.5 Education

Groton, along with the communities of Wells River and Ryegate are part of Blue Mountain Unified School District 21 located at 2420 Route 302 in Wells River. Blue Mountain consists of preschool through 12th grade all under one roof. There are approximately 440 students enrolled at the school. The mission of Blue Mountain Union is to have students prepared to meet the challenges of living and working in diverse and dynamic local and global communities. Therefore, BMU students will be knowledgeable, emotionally and physically fit, civically engaged, involved in the arts, prepared for work and committed to fulfilling personal responsibilities and maintaining economic self-sufficiency. (More information can be found in the Education Plan.)

4.6 Water and Wastewater

Citizens of Groton are proud of the hard work that has gone into the revitalization of Main Street. The work of our citizens has brought more people back to the center of town to enjoy social activities such as Music in the Park and the Groton Growers' Market. The efforts have attracted new, low impact, commercial businesses. We realize that a vibrant center and its continued improvement will greatly enhance the quality of life in Groton. In order to achieve future success and build upon our past work, the town will:

- Conduct a study of the current condition of the water and wastewater systems,
- Determine if the lack of off-site infrastructure is a hindrance to further development of the town center,
- Determine whether the current systems pose a hazard to drinking water supplies and groundwater, including the Wells River, Lake Groton and Ricker Pond,
- Inform the citizens of our findings,
- Assess the level of public support for any future projects, and
- Implement a plan based on the sum of our findings.

4.6.1 Existing Facilities: Sewage Disposal

Almost all of the buildings located in the town center and the Lake area are serviced by on-site private septic disposal systems. Many of these systems were installed prior to the enactment of Vermont's Environmental Protection Rules pertaining to Wastewater Systems and Potable Water Supply. These rules became effective on September 29, 2007 and require any new construction, modification or change of use of an existing structure, or any replacement system, to be built or upgraded to a common standard defined by the State. All existing systems installed and in use prior to July 1, 2007 were grandfathered under a "clean slate" exemption, which was included in the legislation.

As these older systems age and eventually fail, homeowners will face the task of building a new system under more stringent rules. Some may find that there is simply not enough space to build a new system, the soils may not be adequate to treat the waste or there is no good solution for the upgrade of their system. For example, many residents of the lake and village areas have small lots, which may not be adequate for new or improved septic systems. A failing septic system creates a public health hazard and can lead to contamination of their or their neighbor's potable water supply.

Obviously, a failed septic system can create a costly financial burden for a private homeowner. Failure to obtain a wastewater permit may ultimately create a cloud on the title that can delay or prevent the sale of a property. In 2012 the State introduced on-site loan program to provide low-cost financing for the repair or replacement of failed septic or water supply systems. Terms of financing are typically 15 years but can be expanded to 20 years. To qualify the loan recipient must live in the single family home year round, have a gross household income that does not exceed 200% of the state median household income, and must have been denied financing by at least one financing entity.

4.6.2 Existing Facilities: Water Supply

Most property owners in Groton depend on a private, drilled well or other source for their potable water supply. The water is drawn from aquifers, which act as natural storage for potable water. The

Vermont Department of Health has no requirements for testing private residential wells. However, to ensure that drinking water is safe, the Vermont Department of Health recommends a series of tests, including annual testing of the total coliform level and testing every five years for inorganic chemicals and gross alpha radiation screening. Coliform bacteria are a large group of soil and intestinal bacteria, which indicate potential well contamination. They may cause health problems and possibly indicate contamination via human or animal feces. Coliform contamination may be a result of improperly functioning septic disposal systems. When wells and septic systems are permitted by the State of Vermont, wells should be protected by a buffer usually called a “well shield.” Changes to septic permitting now require notification of adjacent property owners who may be affected, which helps to ensure that a sufficient well shield exists. While the Town does not administer the wastewater regulations, the town’s Zoning Administrator could condition a Certificate of Occupancy on the compliance with the new regulations. This would be a low-cost way to protect property owners from contamination of improperly installed or failing systems.

4.6.3 Proposed Facilities: Sewage Disposal

The reliance on private septic system will likely place a significant constraint on the Village, where the highest densities of development for residential, commercial and civic uses are planned. The first step to address this issue is to conduct waste water planning -- an evaluation of the condition of the town’s sewage disposal infrastructure. The process involves citizen-input through surveys, in-person visits and public outreach. The outcome of this phase will be to build a community vision that complements the town’s vision.

The publication Wastewater Solutions for Vermont Communities provides an excellent starting point for considering these issues.

<http://accd.vermont.gov/sites/accd/files/Documents/strongcommunities/cd/planning/DHCA%20WW%20Guide%20final.pdf><http://accd.vermont.gov/sites/accd/files/Documents/strongcommunities/cd/planning/DHCA WW Guide final.pdf>

Should Groton decide to consider expanding wastewater treatment options for the village, there are funding options: The Municipal Planning Grant program, VCDP, as well as USDA Rural Development. The first two grant funding sources require a current Town Plan, and priority consideration would likely be given if the Town had Village Center Designation.

The State of Vermont Agency of Natural Resources offers two possibilities for wastewater planning:

1. **Planning advance loans:** These become loans when the project goes to implementation. They are generally earmarked for towns without any muni wastewater infrastructure. Currently there's about \$50K in the program (the legislature appropriates funds) and no one has called it.
2. **Clean Water State Revolving Fund:** These loans are structured at 0% interest and repayment is held off as long as possible so that the funds can be structured into the financing when it's ready for construction.

4.6.4 Proposed Facilities: Water Supply

Any study of wastewater should also include a review of the town’s water system. Since wastewater eventually recharges our aquifers, any failing septic systems directly affect our sources drinking water. Protection of our water supply is important not only for human use but also for environmental protection and the preservation of our scenic countryside.

Private wells are being mapped, and this GIS data will inform wastewater planning. The results of a water supply study will be included in the sewage infrastructure report.

4.7 Cemeteries

Groton's Village cemeteries are to the east of Groton Village and they cover 16.43 acres. These cemeteries are almost up to capacity. Another cemetery is the William Scott Cemetery on Scott Highway, totaling .48 acres. Two of the oldest cemeteries are on the Great Road (Peacham/Groton town line) .11 acres and on the Glover Road .37 acres. There is another very small cemetery to the south of the Glover Road Cemetery, which is on the corner of the Glover Road and Sayers Road. Park Street, purchased in anticipation of need, encompasses six acres.

4.8 Recreational Facilities

The Frost Ball Field (1.7 acres) is valued at \$22,800, Veteran's Memorial Park (1.7 acres) valued at \$18,900, Puffer Ball Field (3.8 acres) is valued at \$23,700. All of these areas are utilized during the summer and fall. The 67 acres on the Welton Road, purchased for gravel, valued at \$113,900, could be utilized for forest management and recreation. This property is accessed by a Class 3 road, which limits access in the winter months.

4.9 Police Protection

Groton has a constables and an animal control person. Police protection is provided by the Vermont State Police.

4.10 Emergency Planning

The Local Emergency Operations Plan (LEOP) establishes lines of responsibility during a disaster and identifies high risk populations, hazard sites, procedures and resources. It is crucial that the LEOP has the correct people and phone numbers listed. It should be updated annually after Town Meeting and submitted by May 1st. Maintaining the LEOP is one of the four requirements for receiving level State funding in the event of a federally declared disaster (Emergency Relief and Assistance Fund). In order to get the LEOP approved by Vermont Emergency Management, at least one contact at the town needs to have completed ICS 100 or ICS 402 training made available through FEMA.

Groton had an "all-hazard mitigation plan" that was adopted as an addendum to a FEMA-approved regional plan. Groton's plan expired in 2012. Since that time, the process for getting FEMA approval of a plan (now called a "local hazard mitigation plan") is fairly rigorous. NVDA has secured funds to develop a plan for Groton and the planning process should start in 2016.

Developing a local hazard mitigation plan is important to the town because it identifies policies and actions that can be implemented over the long term to reduce risk and future losses. Mitigation plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.

There are financial benefits to the town as well. A FEMA-approval local hazard mitigation plan is required for towns that wish to receive funds from FEMA for specific disaster mitigation projects, such as purchasing a generator for a critical facility or improving drainage or culverts to prevent

future washouts. The Fire Department, for example, has a pressing need for a generator. The Town will be able to apply for FEMA funds to purchase a generator if it has an approved Local Hazard Mitigation Plan. Having a FEMA-approved local hazard mitigation plan is also one of the four requirements for receiving additional state funding in the event of the federally declared disaster (from the [Emergency Relief and Assistance Fund](#)) which is described in greater detail in the Flood Resilience Profile.

4.11 Solid Waste

Groton is a member town in the Northeast Kingdom Waste Management District (www.nekwmd.org), which serves 49 towns (the largest service area in the state). Groton appoints a representative to serve on the NEKWMD board.

Solid recyclable waste is taken to a collection point in East Ryegate. The waste center is open each Friday night from 3pm to 6pm and Saturday mornings from 8am to 12 pm. There is no charge to drop off aluminum and tin cans, cardboard, box board, newspaper, magazines, junkmail or office paper, and #1, #2, #4, #5 plastic containers smaller than 2 gallons. There is also no charge to drop off fluorescent bulbs, oil and drained oil filters, wet cell batteries, dry cell batteries, appliances and scrap metal of any kind. Yard waste, food scraps, Televisions, computers and other electronics are also free. There is a charge for tires and construction debris, furniture and other bulky waste. Groton voter and the other 48 towns approved the budget for the NKWMD.

Some residents in the southern portion of Groton go to the Topsham recycling center because it is closer. There are additional private waste-haulers who can be contracted for curb-side pickup.

In 2014, the district's surcharge for trash (non-recycled waste) was increased by 7% to \$23.25 per ton. The increase was in response to the provisions of Act 148 (also known as Vermont's Universal Recycling Law – see below). The surcharge on trash is based on the amount of waste produced, so member towns have an opportunity to control their waste management costs. Costs can decrease as waste generation rates decrease and recycling rates increase. In fact, 44 of the 49 member towns have reported increased recycling rates for 2015. In 2016, Groton voters approved a solid waste annual budget of \$716,673, down from just under \$744,000 the previous year.

The following table shows disposal, diversion and recycling rates from Groton and nearby towns.

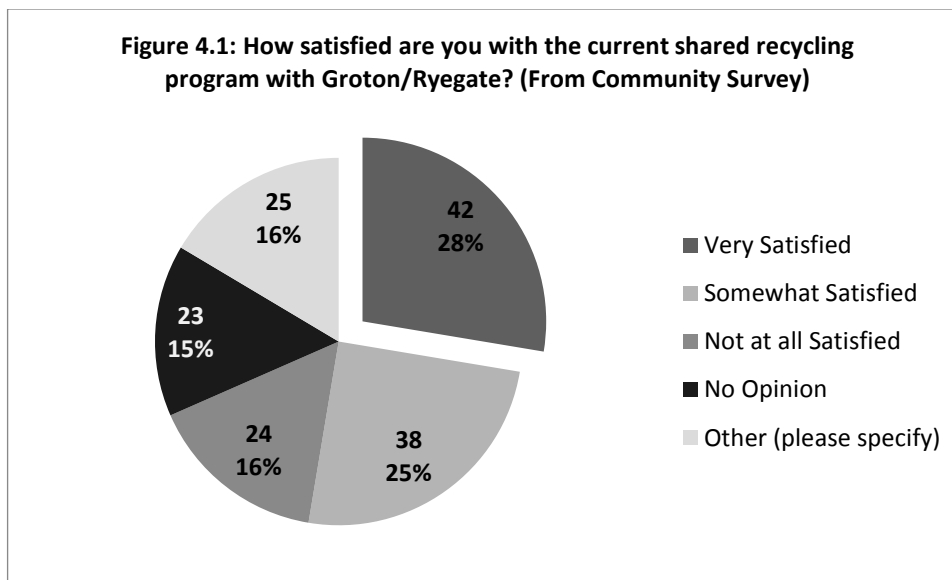
Table 4.1: Waste, Diversion, and Recycling Rates

Town	Disposal per Person, per day (lbs.)*		Diversion per person, per day (lbs.)*		Recycling rate	
	2014	2015	2014	2015	2014	2015
Groton/Ryegate	1.42	1.54	0.80	0.91	36%	37%
Barnet	1.36	1.49	0.83	0.88	38%	37%
Newbury	1.22	1.27	0.96	1.02	44%	44%
Peacham	1.24	1.38	0.90	.98	42%	42%
Topsham	1.50	1.40	0.75	.77	33%	36%
Region-wide	1.62	1.45	1.16	1.19	42%	45%

Source: NEK Waste Management District, 2014 and 2015 Annual Reports *Per person, per day estimates are developed using population estimates from the Vermont Department of Health and estimated summer populations.

More than half of Groton 2016 Community Survey respondents were either “somewhat” or “very” satisfied with the current shared recycling program with Ryegate. “We have one of the best collection systems in the Northeast Kingdom Waste Management towns,” said one respondent. The

primary issue appears to be the distance, with a number of respondents noting that driving to East Ryegate was not convenient from certain locations in Groton. “We save up our recycling and make 3 or 4 trips to Ryegate a year. Could a transfer station closer to Groton reduce CO2 emissions overall?”



Act 148, Vermont’s Universal Recycling Law, was passed in 2012. The purpose of this law was to increase recycling, reduce greenhouse gas emissions, decrease the dependence on landfilling, and reduce municipal expense by diverting recyclables and compostable materials from the waste stream. This law enforced the practice of unit-based pricing for trash disposal (sometimes called “Pay As You Throw”) by July 2015. It also banned the disposal of recyclable materials (glass, metal, plastics #1 and #2, cardboard and paper) on July 2015. The law will ban the disposal of leaves, yard debris and clean wood in July 2016 and food scraps by July 2020. All solid waste facilities (transfer stations, drop-offs, and landfills) that collect trash were required to offer collection of baseline recyclables by July 2014. (Commercial haulers were exempted from this requirement.) Solid waste facilities -- including commercial haulers -- must offer collection of leaf and yard debris by July 2015 and food scraps by July 2017. Facilities cannot charge an additional fee for the collection of recyclables, but they can charge for the collection of yard debris and food scraps.

In 2015 the NEKWMD applied for a 5-year exemption for the requirement for haulers to collect recycling in accordance with Act 148. Although haulers may opt during this period, many haulers in the region will still offer collection. The NEKWMD was able to obtain the exemption because we have one of the lowest per capita waste generation rates in the country.

Food scraps are banned from landfills by 2020 with a phased-in schedule for larger food scrap generators. By July of 2017 those who generate about a half-ton of food scraps per week must divert their scraps IF a certified facility is within 20 miles. By 2020, ALL generators of food scraps, including households, must divert food scraps, with no exceptions for distance. This creates a challenge for our region because there is only one certified facility in the region that will accept food scraps, and a handful of haulers that will take food scraps to farms or composting sites. (A composting facility in Burke closed earlier this year.) The Ryegate Recycling facility offers food scrap collection. Current annual diversion rates are:

Ryegate/Groton: 2.61 tons

Peacham: 2.0 tons

Newbury: 6.13 tons

Local farms have an opportunity to collect food scraps and use them to feed chickens. (The scraps cannot be used to feed pigs.) The Town would clearly benefit from identifying a cost-effective way to reduce food wastes, and divert food wastes as close to the source as possible. This may be accomplished by establishing a food scrap collection site in Groton, and by encouraging private households to compost (The UVM Extension offers education and outreach on composting.) Additionally the Town can help to reduce food waste by hosting cooking and food preparation classes and workshops in the Community Building. Finally, local growers are encouraged to find new uses for “ugly” fruits and vegetables that are considered unmarketable because of blemishes but are still perfectly edible.

4.12 Emergency Food Shelf

The Groton Food Shelf was established to assist Groton and Ryegate residents in a time of need. The town clerk or treasurer makes the eligibility determination. This effort operates on a fluctuating reserve funded entirely by private donations. The food shelf also receives privately donated foods. As food rescue efforts intensify in order to comply with Act 148, it is imperative that people who donate food understand safe food handling guidelines. For example, non-perishable foods (such as canned foods) can be donated past their suggested sell by dates. Prepared foods and frozen foods, however, have more stringent guidelines. Prepared foods may not be donated if they have been previously served. For more information, visit this web site:

http://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/Universal-Recycling/VT_DonatingFoodSafely_final.pdf

There is limited storage space at the Food Shelf, but the site does have some refrigeration and freezer space.

4.13 Library

The Groton Free Public Library is located at 1304 Scott Highway in the center of Groton Village. The Library is professionally managed by a librarian with an extremely active and supportive group of trustees. The purpose of the Groton Free Public Library is to assemble, preserve, organize, and make freely available to the people of the Town of Groton, books and other resources for education, enlightenment, and recreation. Aside from books for adults, teens, and children, the Groton Free Public Library has: wireless Internet



free in and around the library; a growing DVD collection; special programs (free) for all ages; free access to Listen Up! Vermont audio and ebooks; Interlibrary loan from all public, school, and college libraries in Vermont; a community meeting room available for functions; an active Friends of the GFPL group that helps the Library in a multitude of ways; and a craft group every Wednesday from 1-3 p.m.

4.14 Telecommunications

Groton does have cell coverage, although service is spotty or non-existent in some areas. High-speed Internet access is available to most Groton residents.

Goals:

- To plan for, finance and provide an efficient system of public facilities and services to meet future needs.
- Ensure that the Town remains able to provide facilities and services in keeping with the town's population growth and changing demographic.
- To maintain and enhance recreational opportunities for Vermont residents and visitors.
- Ensure the long-term planning endeavors of the community building to ensure highest and best use within the community.
- Ensure the town's preparedness in the event of a disaster.
- Growth should not significantly diminish the value and availability of outdoor recreational activities.

Planning Policies:

- The Town shall assess the public perception of the sewage disposal and water supply infrastructure through surveys, in-person visits and public outreach. Determine the town's capabilities for continued sustainability with respect to sewage disposal and water supply.
- The Town shall clearly define a community vision that outlines what is important for our town center and shoreline district with regard to sewage disposal and water supply.
- The Town shall pursue preliminary wastewater and potable water solutions and estimated costs that address the goals and vision of the community, present all of the findings to the public, assess public and political support, and, as appropriate delegate responsibilities to the Community and Economic Development Committee.
- The Town shall support the efforts of the Community and Economic Development Committee.
- The Town shall support the efforts of the library.
- Public access to noncommercial outdoor recreational opportunities, such as lakes and hiking trails, should be identified, provided, and protected wherever appropriate.

Recommended Strategies:

Strategy	Timeframe	Responsible Parties	Resources
Distribute information about safe food handling guidelines at the Food Shelf.	Short-term (1 - 2 years)	Town Clerk	Food Cycle Coalition, Hunger Free Vermont, Vermont Department of Environmental Conservation
Identify a suitable space for additional book storage for the Library	Short-term (1 - 2 years)	Library Board	Grant programs (e.g. USDA Community Facilities)
Finish the memory wall behind the building.	Near Term (2 to 5 years)	Community and Economic Development Committee	Donations, grants (e.g. FEMA Hazard Mitigation)
Identify new cemetery space for future expansion.	Near Term (2 to 5 years)	Selectboard Cemetery Commission	
Seek funding to study issues associated with sewage disposal and water supply.	Long-term (5 - 8 years)	Selectboard, Planning commission	Agency of Natural Resources
Assess the physical condition of existing disposal fields and private wells. Map the results.	Long-term (5 - 8 years)	Planning commission	Municipal Planning Grants, Agency of Natural Resources (including Natural Resources Atlas)
Identify potential sites in Groton for handling recyclables, organics, and food diverted from the waste stream.	Long-term (5 - 8 years)	Planning Commission	NVDA, NEKWMD, NEK Food System Leadership Council
Promote home composting through education and outreach	Ongoing	NEKWMD, Local growers	Composting Association of Vermont, UVM Master Composters, Groton Growers Market, Vermont Community Garden Network
Work with and support the Community and Economic Development Committee for continued improvement of Town Offices and Community Space.	Ongoing	Selectboard, Community and Economic Development Committee	NVDA, Grant programs (e.g. USDA Community Facilities, Vermont Community Development Program)
Work to identify possible cell tower sites and work with service providers to explore future coverage.	Ongoing	Community and Economic Development Committee	Division for Telecommunication and Connectivity (Dept. of Public Service)

5. PRESERVATION

All the beautiful vistas. Conservation land, lack of commercialism.

-- Groton Community Survey respondent

The unique character of a community comes from both its natural and man made environments. Groton is blessed with rolling topography and soils that provide for a variety of land uses. The town of Groton is situated among hills, forests and rivers and provides an idyllic setting to both raise a family and to enjoy the numerous opportunities for recreation. Preservation of our natural areas, vistas, scenic byways, night time skies and historic homes and buildings should be taken into account with all land use decisions.

5.1 Historical Homes and Buildings

The community is also fortunate to have many historic and interesting buildings. The goal of future land use and zoning bylaws should be to preserve the natural and historic features of the Vermont landscape within the town. These add greatly to the “color” of the community as much as the scenery. Many of these buildings are in the village proper while others are scattered throughout the town. These include but are not limited to the following:

- Stone House built by William Taisey in 1808
- Methodist Church built by Ephraim Low in 1836, remodeled by William Goodwin in 1889
- Groton Historical Society House built by Peter Paul in 1840
- Baptist Church built by George H. Rice in 1866
- Jonathan R. Darling house built by William Goodwin
- Honors House (bequeathed to the Methodist Church then later sold)
- IGA store (restored by Douglas French)
- Groton General Store (restored by Gilman Housing in 2005)



- Groton Free Public Library (restored by Gilman housing in 2005)
- Post Office and Charles Lord Printing shop built by George Millis
- Railroad Station
- Stone shed (restored by Harold Puffer)
- Feed stores
- Deane Page House
- Burton Brown House
- George Ricker House
- Cliff House
- Dot Main House
- Isaac Welton House (Welch Block)
- Waldo Glover House
- Norma Hosmer House

Information on these and other buildings can be obtained through the Groton Historical Society (GHS).



In order to promote and maintain a viable “Downtown Village,” any of these buildings, which can be utilized in such a manner, should be. Making necessary repairs to existing buildings to make them suitable for private or town use should be encouraged. This would result in keeping familiarity about town and build community spirit. Adaptive reuse of historic structures for commercial or civic uses in the Village area may be aided by a Village Center Designation. Privately held income producing properties will be able to seek tax credits for fit up to structure built before 1983. Historic civic buildings (such as churches) in the Designated Village

Center cannot apply for tax credits, but they will receive special consideration for historic preservation funds from grant programs.

Goal:

- Encourage restoration and reuse of historic buildings.

Planning Policies:

- The Town's Zoning Bylaws should recognize the significance of these buildings both in the village and throughout the town.
- The Village District zoning should be periodically evaluated to ensure that it accommodates uses that are appropriate to the village character.

Recommended Strategies:

Strategy	Timeframe	Responsible Parties	Resources
Explore and pursue Village Center Designation.	Short-term (1 - 2 years)	Selectboard, Planning Commission	Vt Village Center Program, NVDA
Develop a plan to identify and preserve the historic resources in town. The GHS has expressed interest in developing such a plan and has formed a committee to identify homes 100 years old or more. The GHS will contact owners to include them in a registry and identify the buildings with an information plaque. This process could be taken a step further in the future with a brochure and map with more detailed historical information on the buildings.	Near Term (2 to 5 years)	Groton Historical Society	Municipal Planning Grants, Department of Historic Preservation, Preservation Trust of Vermont

5.2 Natural Areas

5.2.1 Wetlands

Based on the National Wetland Inventory maps, Groton has an estimated 815 acres of wetlands within its borders. The wetlands mapped during the planning process are generalized and are not meant to be comprehensive and replace field checking. Groton's mapped wetlands can be viewed on the Agency of Natural Resources Atlas: <http://anrmaps.vermont.gov/websites/anra5/>

Wetlands perform important functions in enhancing water quality, recharging ground water, and providing wildlife habitat. In recognition of the important role that wetlands play in the environment, the State of Vermont Wetlands Rules protect such areas. These areas are an important part of Groton and should be preserved and enhanced.

Maintaining critical wildlife habitat, such as nesting areas of rare birds and feeding areas of animals, and protecting wetland areas are important to the town and should be given priority where conservation efforts are concerned.

5.2.2 Deer Yards

Deer in Vermont live near the northern limit of white tail deer range in eastern North America. Deer need to use a specific winter habitat when severe climate conditions become a threat to the animal's survival. Areas used year after year by deer seeking winter shelter are called “wintering areas” or deer

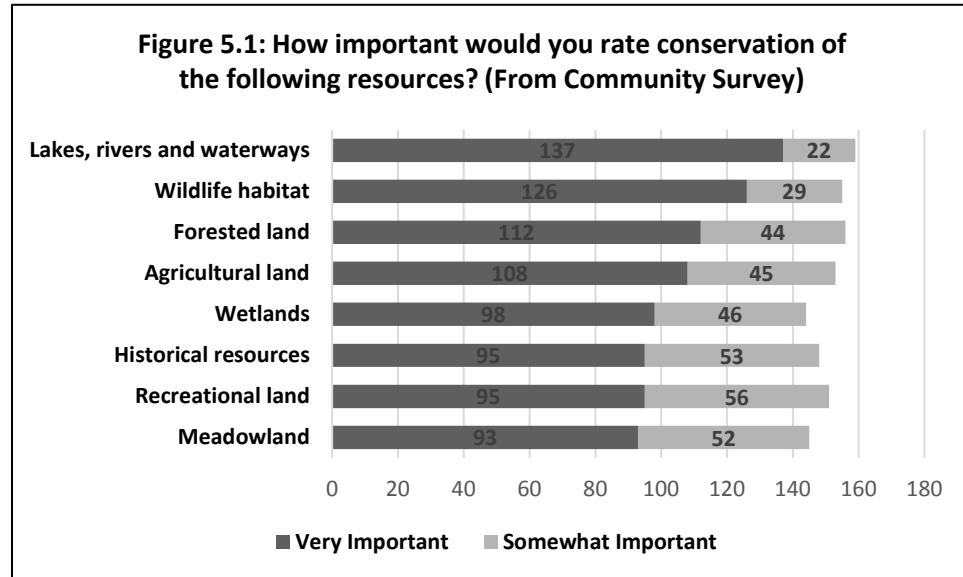
yards. these areas consist of two basic habitat components. The core range is often characterized by concentrations of relatively tall, dense softwoods. This reduces the snow depths, protects the deer from the wind and increases the average temperature and relative humidity.

South facing slopes are often preferred due to increased solar gain. The second component consists of mixed hardwood and softwood adjacent to or within the core range that provides accessible browse.

The availability of quality wintering areas is the limiting factor for whitetail deer in most of Vermont. Since only six percent of Vermont is considered deer wintering area, the State of Vermont has made protection of these areas a priority. Considering the economic contribution and the important place that deer hunting has in the traditional lifestyle of Vermonters, the statewide priority is understandable. However, at the local level, restrictions imposed on deer yards may be excessive. The bulk of Groton’s 7,412 acres of deer yards are located on privately held lands. These lands receive more scrutiny by state agencies when development is proposed on them, which makes future development with Groton even more difficult. So even though the State goal of protecting deer yards may be good, state agencies should consider the overall impact on the local towns and landowners before making any decisions. Not every acre of deer yard is critical and some kind of mechanism to allow development within some of them should be considered.

5.2.3 Natural Heritage Sites

The Vermont Natural Heritage Program is responsible for locating and mapping rare plants and animal habitat in Vermont. Using information from aerial photography, local experts, field visits and other sources, they compile a list of sites within each municipality in Vermont. This information can be viewed at the Agency of Natural Resources’s online atlas. The quality of the inventory depends on the quality of the information received and willingness of the landowner to allow people to inventory their property. It is not necessarily comprehensive. Once identified, information about the species of habitat is collected and mapped. A generalized map showing the approximate location of the site is then developed. In general the sites are not protected by law, but are meant to inform



landowners so they may be careful not to unknowingly disturb a rare plant or an animal habitat. Examples of the sites in Groton include the following:

- Rare plants and loon nesting sites on Kettle Pond
- Threatened rhododendron at Lake Groton
- Threatened laurel at Levi and Ricker Ponds
- Rare plants at Seyon Ranch

5.2.4 Significant Scenic Roads and Waterways

Groton has several significant scenic roads and waterways. The Wells River flows from West Groton through the village and could be a center of recreational activity. The Cross Vermont Trail, which runs along the old rail bed from Ryegate through the Groton State Forest, is a year round multi use trail. The Groton portion of the trail is owned by the Town and is considered a legal trail. The Ryegate portion of the rail bed is in privately held lands, but the Town of Newbury owns their respective portion of the trail and has made extensive enhancements to it.

5.2.5 Basin Planning Efforts

Tactical Basin Plans focus on the projects or actions needed to protect or restore specific waters and identify appropriate funding sources to complete the work, based on monitoring and assessment data. Since these tactical plans will guide all watershed work supported by the Watershed Management Division, the issues identified in these plans are the ones that will be prioritized for management attention, including funding.

Groton is part of the Wells watershed, which is detailed in Tactical Basin Plan #14. The plan was adopted in 2015. Many of the priority actions dovetail with goals and strategies in this plan. For example, the plan identifies the need to hold workshops in the watershed showcasing and demonstrating best management practices to protect water quality from logging, using findings from the VT Timber Harvesting Assessment, AMP Revision, and the Voluntary Harvesting Guidelines for Vermont Landowners. The plan also calls for the preparation of road erosion inventories and capital budgets. Groton has already accomplished this and is ready to proceed on priority actions such as replacing undersized culverts. Other actions in the Tactical Basin Plan include:

- Regularly monitoring waters in this basin to better determine nutrient load sources as part of the Long Island Sound Nitrogen TMDL implementation.
- Completing Agricultural assessments and BMP implementation.
- Removing the defunct Wells River Number 9 dam in Groton Village.
- Selectively restoring in-stream fisheries habitat within the upper Wells River with the Groton Forest state-owned lands and Wildlife Management Areas.

Goals:

- Recognize and preserve our scenic and natural areas.
- Maintain and enhance the diversity of species found in Groton.
- Maintain the water quality in Groton.

Recommended Strategies:

Strategy	Timeframe	Responsible Parties	Resources
Consider conducting a natural resources inventory to enhance information from the Vermont Natural Heritage Program in order to identify critical wildlife habitats and wetlands that perform critical ecological function (such as water quality and flood water storage) and build a mapped inventory to be used as a future guide for preservation.	Long-term (5 – 8 years)	Planning Commission	Environmental mapping consultants, Municipal Planning Grant program, ANR (basin planners).
Pursue ways to permanently conserve them, either through acquisition or easement.	Long-term (pending outcome of natural resource inventory)	Land owners, Planning Commission, Selectboard	Land trusts
Identify roads and byways that have significant scenic value.	Long-term (5 – 8 years)	Planning commission Selectboard Road Foreman	NVDA, Municipal Planning Grant program
Promote scenic bike routes through Groton	Ongoing	Community and Economic Development Committee	Vermont Cross Trails Association, Northeast Kingdom Travel & Tourism Association, NVDA
Work to open access along the Wells River by partnering with landowners.	Ongoing	Community and Economic Development Committee, Selectboard	

6. EDUCATION

Groton is a member of the Blue Mountain Union (BMU) School District #21 (www.bmuschool.org). The school was built in 1970 to serve residents of Groton, Ryegate and Wells River and consists of grades preschool through twelve, all housed under one roof. The school is located at VT Route 302 near P & H Truck Stop and Exit 17 off I-91.

Built for a capacity of 525 students, the school has consistently had an enrollment of 400-450 since 2000. In 2014 enrollment was 430, including 163 from Groton. In 2013-2014, there were 36 tuition paying students. Based on current population trends, the enrollment should remain steady to slightly increasing over the next five years. Any gains or losses should be distributed over all grade levels.

In addition to academic programs offered at BMU, students currently have access to technical programs available at River Bend Career & Technical Center (CTE) in Bradford (www.riverbendtech.org). The mission of River Bend is to provide educational opportunities and support for students in developing their career goals and skills to become productive members of an ever-changing, global society. Programs include building trades, electronic technology, heavy equipment operating, business technology, culinary arts, cosmetology, human services, environmental science, automotive technology, emergency and fire management services, digital communication and multimedia design. Adult education offerings include keyboarding, nursing and LNA programs. Additional lifelong learning opportunities can be found at Springfield College in St. Johnsbury, Community College of Vermont (which has a St. Johnsbury facility), and Lyndon State College.

Under Act 46, the Town is currently considering mergers that may change access to programming.

The Town must work with BMU (or resulting school district) to develop a long range plan to address future needs of the school in order to maintain a high standard of education. This plan should be developed before the needs become critical to ensure a focused, balanced and cost effective approach. Providing high-quality, accessible and affordable education to the youngest residents of the town remains a challenge. As economic, political, and educational policies change, it becomes critical that the town strive to maintain a balance between educational idealism and economic reality. To do this, the cultivation and maintenance of a relationship between residents, the selectboard, and the local school board that is rooted in collaboration, respect and awareness of the varied and diverse economic needs, is paramount. The longevity and vibrancy of the town depends not only upon providing our youth with rich educational experiences, but also upon ensuring that those experiences remain affordable to taxpayers.

Goals

- Support the school in providing the best education possible to our students.
- Balance the desire for upgrades and expansion with current economic realities.
- Achieve a fair and equitable tax structure for the residents of Groton.
- Encourage community involvement with the Blue Mountain School District, supporting the activities that are offered to the community.

7. ENERGY

Energy conservation, self sufficiency and independence bolster our nation's security by lessening dependence on imported oil and other fuels whose supply may be disrupted and over which we have no control.

Vermont's Comprehensive Energy Plan, adopted in 2011 and updated in 2016, seeks to reduce greenhouse gasses and reduce reliance on fossil fuels. The plan is centered on these ambitious goals:

- Reduce total energy consumption per capita: 15% by 2025 and more than one-third by 2050.
- Meet energy needs from renewable sources: 40% by 2035 and 90% by 2050.

Act 174 was recently passed in support of achieving these goals. The Act identifies enhanced standards for regional and local plans. While these standards are not mandatory, plans that adopt them will be given "Substantial Deference", which may be a stronger voice in the Section 248 review process for renewable energy installations. NVDA's regional plan is currently being updated to provide more information and resources to communities that wish to develop enhanced energy plans.

Before we can establish targets that support statewide energy goals that are achievable, it is critical that we better understand our current energy use patterns. BTUs – which stands for "British Thermal Units" is used as a standard of measurement in this plan because it allows for comparison between types of energy inputs. Here are some example conversions:

Table 7.1: British Thermal Units

Measurement	BTUs
1 gallon gasoline	124,000
1 gallon heating oil	139,000
1 gallon liquid propane	91,333
1 cord of wood	20,000,000
1 ton of wood pellets	16,400,000

7.1 Home heating

The Vermont Dept. of Public Service estimates that, on average, residences in New England use somewhere about 45,000 to 80,000 Btus of heat energy per square foot annually, averaging statewide at about 110 MMBtus per residence per year for space and water heating. The U.S. Energy Information Administration estimates that the bulk of this expense can be attributed to space heating. In colder climates like New England, space heating accounts for about 60% of residential energy consumption, and water heating, about 15%.

The latest information shows that most residents of Groton heat their homes with fuel oil, wood, and propane. Fuel oil, kerosene and propane are distributed from Bradford, St. Johnsbury, Barre and other towns. There is no scarcity of wood as much of the land is forested. The changeover to firewood or wood pellets for heating is not without problems, wood is more difficult to use for heating by older residents and may not be as readily accessible to renters, and the use of wood as a source of heat increases the concern about fire in the community.

The regional planning commission has developed estimates to measure residential heating in Groton (primarily for thermal and some for water). While the estimation process makes a number of general

assumptions, it does use the best data that is available (American Community Survey 5-Year Estimates and guidelines from the Department of Public Service). Residential heating in Groton currently accounts for 61,288 MMBTUs (millions of BTUs) annually.

Table 7.2: Groton Home Heating

Fuel Type	# of Households	Average Use (annual)	% of Use (All households)	% of Use (Owner-occupied)	% of Use (Renter Occupied)
Bottled, tank, or LP gas	70	98,308 gallons (8,979 MMBTUs)	18.4%	21.0%	6.1%
Electricity	4	52,943 kWh (181 MMBTUs)	1.1%	0.0%	6.1%
Fuel Oil, Kerosene	161	126,148 gallons (17,496 MMBTUs)	42.4%	36.9%	68.2%
Coal, Coke	13	88 tons (1,733 MM BTUs)	3.4%	4.1%	0.0%
Wood	132	823 cords (16,450 MM BTUs)	34.7%	37.9%	19.1%
Solar Heating/Other	0	0	0.0%	0.0%	0.0%

Source: Northeastern Vermont Development Association (NVDA), using American Community Survey (ACS) 5-Year Estimates 2010-2015)

Note about the above data: NVDA's analysis does not include utility gas. A very small number of ACS indicated that they heated with "utility gas", which includes gas piped underground from a central system to serve the neighborhood. The only utility in Vermont that delivers gas in this manner (i.e. natural gas) is Vermont Gas, and its service area is well outside of our region. It is most likely that survey respondents confused this source with bottled, tank or LP gas. Current estimates show that only 26.8% of Groton's residential heating comes from renewable sources. However, ACS data does not account for wood pellet usage, which has become very popular in recent years, so the percentage of renewables usage may be higher. The two most likely paths for Groton to meet its energy reduction goals of 20,255 MM BTUs by 2050 are:

1. **Energy efficiency.** The age of the region's housing stock is a significant challenge to reducing energy use. While usage for residential structures could be as low as 45,000 BTUs per square foot, the Vermont Department of Public Service estimates that pre-1940 housing structures (which tend to be "leaky" and poorly insulated) usage could be as high as 80,000 BTUs per square. The above estimate methodology accounted for the energy inefficiency of Groton's older housing stock, which amounts to nearly 40% of owner-occupied housing units, and 33% of renter occupied units. Effective weatherization of these units could reduce energy use by 14,381 MM BTUs per year, or 23%.

An energy audit, an assessment of where a residence is losing heat or electricity, is the best

“first step” in improving efficiency. Efficiency Vermont offers an array of assistance options, including free over the phone consultations and referrals to qualified Home Performance and Energy Star contractors. NVDA has already completed energy audits of Groton’s Community Building, and some of these recommendations were carried out when the building was improved for accessibility in 2012. Energy audits were also conducted for the Town Garage and the Emergency Services facility.

2. **Emerging technologies:** Heat pumps can extract air from the ground (geothermal) or from the outside (air-source) while a compressor heats the air to circulate throughout the house. While heat pumps do require electricity, they can operate more efficiently, resulting in significantly lower heating bills. Geothermal pumps can provide 100% of space heating needs. While air source heating pump technology has improved in recent years, these systems are still likely to require a secondary heating source on the coldest of days. The cost of replacing older fuel-burning systems is obviously a barrier. Green Mountain Power offers a leasing option for new heat-pump systems, and rebates from Efficiency Vermont are available as well.

Groton’s mobile home stock may also benefit from new technologies. About 8% of the town’s housing stock are comprised of mobile homes. Although mobile homes are a significant source of affordable housing in our region, the lower price tag may come at the expense of energy efficiency: Vermont Energy Efficiency Investment Corporation estimates that mobile home owners spend about 66% more of their income on energy costs than owners of stick-built properties. The Vermont Housing & Conservation Board (VHCB) recently concluded a pilot project to site Vermod high-performance single-wide mobile homes. When equipped with a solar panel, these energy efficient homes are nearly net-zero.

7.2 Electricity

The electrical power for the town is supplied by Green Mountain Power (www.greenmountainpower.com) and Washington Electric Cooperative (www.washingtonelectric.coop). There is no scarcity of power. The only power problem is short term, when power is disrupted by storm damage.

The Vermont Community Energy Dashboard indicates that 2016 consumption for the Town of Groton is about 14,951 MM BTUs. Nearly 30% of this demand (4,462 MM BTUs) is met through renewal resources. Even though the Wells River passes through Groton, no electricity is generated locally from hydro power. There is now a solar panel farm in Groton located along 302 in the village. There is also a second solar panel farm built by Groton Timberworks. More information about these two sites can be found at the Green Mountain Community Solar website (www.gmsolar.us.com).

Table 7.3 Green Mountain Community Solar

Green Mountain Community Solar, LLC					as of 8/24/2015				
Groton 140 kW Array at 1035 Scott Hwy, Groton, VT					Billing cycle - through the 10th of month				
Budget or Forecast					Actual Farm Output and GMP Rate kWh var from budget				
Days in month	Month	kWh	\$/kWh	Credit \$	kWh	\$/kWh	Credit \$	% diff mo.	% ytd
31	Jan 1 - Feb 6	7,795	\$ 0.207	\$ 1,617	6,612	\$ 0.207	\$ 1,371	85%	85%
28	Feb 7 - March 9	12,279	\$ 0.207	\$ 2,547	13,968	\$ 0.207	\$ 2,897	114%	103%
31	March 10 - April 6	16,920	\$ 0.207	\$ 3,509	19,773	\$ 0.207	\$ 4,101	117%	109%
30	April 7 - May 8	19,579	\$ 0.207	\$ 4,061	21,788	\$ 0.207	\$ 4,519	111%	110%
31	May 9 - June 9	24,171	\$ 0.207	\$ 5,013	25,152	\$ 0.207	\$ 5,217	104%	108%
30	Jun 10 - Jul 9	25,331	\$ 0.207	\$ 5,254	23,912	\$ 0.207	\$ 4,960	94%	105%
31	Jul 10 - Aug 12	25,960	\$ 0.207	\$ 5,384	24,900	\$ 0.207	\$ 5,165	96%	103%
31	Aug 13 - Sept _	23,784	\$ 0.207	\$ 4,933	10,356	\$ 0.207	\$ 2,148	44%	94%
30	Sept _ - Oct _	18,322	\$ 0.207	\$ 3,800	-	\$ 0.207	\$ -		84%
31	Oct _ - Nov _	11,892	\$ 0.207	\$ 2,467	-	\$ 0.207	\$ -		79%
30	Nov _ - Dec _	7,348	\$ 0.207	\$ 1,524	-	\$ 0.207	\$ -		76%
31	Dec _ to Jan _	6,188	\$ 0.207	\$ 1,283	-	\$ 0.207	\$ -		73%
365	Budget kWh	199,568		\$ 41,392	146,461	\$ 0.207	\$ 30,377	73%	

The number one issue for respondents to the 2008 town survey was the use of alternative energy. The overwhelming majority favor investigation into solar, hydro and wind sources for energy. A growing number of residents are looking into switching to renewable heat sources, such as wood pellets.

7.3. Transportation

Although oil prices have stabilized in recent years, fuel costs for long commutes in automobiles have created a financial burden for many Groton residents. According to most recent ACS estimates, 87% of the 531 workers from Groton drove to work alone, while only 8% carpoolled. Travel to work patterns are very widely dispersed. However, a centrally located park and ride for carpoolers, coupled with a concerted effort to match riders with drivers, could help reduce energy consumption. Switching to hybrid and electric vehicles may be a costly proposition for many residents, but making a recharging station available would be extremely helpful.

7.4 Development Patterns

Promoting a development pattern that honors the tradition of compact village centers surrounded by open countryside will help to reduce energy costs in the long-range. This goal, however, is not without challenges. While a compact village may help reduce incidental trips, it will be unlikely to get residents closer to their work destinations. Groton's central location to multiple job markets will continue to promote long commutes in multiple directions. That aside, the Groton Village contains the greatest number of multi-unit structures, which as a rule, consume considerably less energy than single-family detached homes. Reinvestment in rental units in this area may help to improve the quality, efficiency, and availability of multi-unit stock. Reinvestment in other income-producing structures (like stores and service-oriented businesses) might help to bring services and amenities closer to residents of the village and its vicinity and ultimately reduce incidental car trips.

Goals:

- Promote energy education and energy conservation practices.

- Continue to encourage town residents to conserve energy by recycling, walking, turning off lights, keeping vehicles tuned and maintained for best mileage and minimizing use of hot water.
- Encourage all new construction, renovation, and replacement to use the best and take maximum advantage of renewable energy. This should include building and maintaining roads and drives with safe and appropriate turning space for all season delivery of fuels.
- Encourage use of locally produced materials for construction.
- Consider and support the use of local energy sources such as wood, hydro, wind and solar energy by members of the community.

Recommended Strategies:

Strategy	Timeframe	Responsible Parties	Resources
Adopt an energy conservation policy for town buildings and vehicles, e.g., purchase and use insulation and weatherization products, fuel efficient vehicles, automatic light switches and thermostats, Energy Star appliances and fixtures.	Short-term (1 - 2 years)	Selectboard	Vermont League of Cities and Towns, Vermont Energy Investment Corporation
Explore and pursue Village Center Designation as a way to incentivize private investment in multi-unit housing stock and commercial properties..	Short-term (1 - 2 years)	Selectboard, Planning Commission	Vt Village Center Program, NVDA
Support an Energy Committee to look into and assist with all of these recommendations.	Near Term (2 to 5 years)	Selectboard	Vermont Energy Investment Corporation
Look into purchasing more street lights in the town to save both money and energy as was done in Plainfield, Vermont.	Long-term (within five years)	Selectboard, Energy Committee	
Consider exempting from tax or stabilization for renewable energy systems on residential and commercial property.	Long-term (within five years)	Selectboard Community and Economic Development Committee, Energy Committee	NVDA, Municipal Planning Grant program
Continue to conduct energy audits of town owned buildings and vehicles, and take action on identified areas that will reduce energy consumption and/or	Ongoing	Selectboard, Community and Economic Development Committee, Energy	Efficiency Vermont, NVDA

costs.		Committee	
Provide information to the community from a variety of governmental and private sources through gathering and at the town office and library.	Ongoing	Community and Economic Development Committee, Energy Committee	

8. HOUSING

According to the most recent American Community Survey 5-year estimates (2010-2014), there are 676 housing units in Groton, nearly 60% of which are occupied and just over 40% vacant. Of the vacant housing units, the vast majority are for seasonal, recreational, or occasional use.

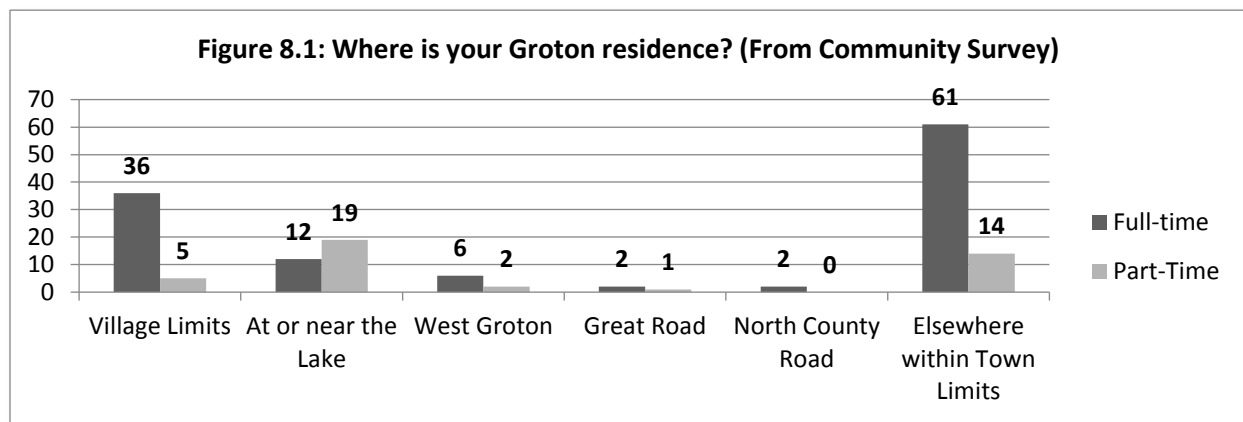
Of the occupied stock, 318 are owner-occupied, and more than 73% of the owner-occupied units carry a mortgage. There are 69 renter-occupied units in town, and 50 of these units are found in the Groton Village area.

The single-family home (1-unit, detached) is the predominant form of housing in Groton, accounting for more than 80% of the housing stock. Mobile homes account for just under 9% of the town's housing stock, which is slightly lower than county-wide averages. Town-wide, about 30% of the town's housing stock predates 1940. In Groton Village, however, more than half of the housing stock was established before 1940.

8.1 Housing Zoning Districts

8.1.1 Village Center

This is the area in the central part of the community and is designed to continue the New England character, which includes residential, commercial and religious uses. Growth should be concentrated within the village center, leaving much of the open land less developed. It is important to preserve and promote the residential character of the village.



8.1.2 Rural District

This district is comprised of residential, agricultural and other compatible uses at densities compatible with the physical capability of the land and the availability of community facilities and service on lands outside of the Village Center. Planned unit development, open space for preservation and other techniques for preserving the rural character of these areas are encouraged. Groton's zoning bylaw, which were last revised in 2012, provides for planned unit development, but does not require it. The stated purposes of planned unit development are to:

- create a choice in the type of environment and living units available to the public, and quality in residential land uses so that development will be a permanent and long term asset to the town;
- open space and recreation areas;

- c). A pattern of development, which preserves trees, outstanding natural topographic and geologic, features and prevents soil erosion;
- d) An efficient use of land resulting in smaller networks of utilities and streets and wherever economically feasible, underground utilities are recommended;
- e). An environment in harmony with surrounding development; and
- f) A more desirable environment than would be possible through strict application of the zoning regulations.

Under the existing regulations, the Planning Commission may reduce dimensional standards (e.g. minimum lot sizes, setbacks, etc.) at their discretion.

The Planning Commission also has the authority to increase the overall density of a planned unit development by as much as 25%. Although the bylaw does not provide stated reasons for doing so, it is possible that densities could be increased in order to preserve contiguous tracts of open space or create a certain number of housing units that are affordable or age-restricted. Planned unit developments in Groton must occur on six contiguous acres of land, with the exception of the Conservation District, which requires 50 acres.

8.1.3 Shoreland District

This district preserves the attractive natural features surrounding the ponds and lakes of Groton while permitting seasonal and year 'round residential uses. Shoreland includes the land within 500 feet of the mean water level of ponds and lakes designated on the zoning map. The housing units in the Shoreland District are mixed seasonal and year round homes with limited potential for growth.

The highest concentration of housing units is in the Village and Shoreland Districts, which have a lot of potential for future growth. Most units are of the single-family home style and the rest are two family homes, farms and other businesses.

8.2 Affordable Housing

A household's total housing costs should be 30% or less of the household income in order to be considered affordable. While the 30% rule applies to housing costs for all income brackets, Vermont statute defines **affordable housing** as households with an income below 80% of their county median household income who pay no more than 30% of their income on total housing costs. By statutory definition, housing costs for home owners include principal, interest, taxes, insurance, and association fees. For renters, costs include rent, utilities, and association fees. For a housing development to be considered affordable, at least 20 percent of all the units or five units (whichever is greater) have to be considered affordable and must be subject to covenants or restrictions to keep the units affordable for at least 15 years. Using these guidelines, the American Community Survey 5-Year Estimates suggest that home ownership may be slightly more affordable than county-wide. Rental units, however, are less likely to be affordable.

Table 8.1: Affordability of Groton Housing Stock

	Selected Monthly Owner Costs as a % of Household Income		Gross Rent a % of Household Income
	Housing Units w/Mortgage, Paying 30% or More	Housing Units w/o Mortgage, Paying 30% or More	Occupied Units Paying 30% or More for Rent
Groton	28.3%	9.4%	60.4%
Groton Village	23%	18.2%	56.4%
Caledonia County	35.9%	21.7%	58%
Vermont	36.3%	23.4%	52.6%

Source: American Community Survey 5-Year Estimates, 2010-2014

As is typical of a rural community in the Northeast Kingdom, the most prevalent options for affordable housing are rental units, mobile homes, and accessory dwelling units. The latter – which used to be known as “mother-in-law” suites – are provided for in Groton’s zoning bylaw and are treated as a permitted use of a single-family owner-occupied dwelling. (The occupant of the accessory dwelling unit does not have to be a relative.) American Community Survey 5-Year estimates indicate that there are about 8 “attached” 1-unit dwellings in Groton. It is possible that these are accessory dwelling units.

Rental options are most likely to be 1- or 2-unit dwellings outside of the village area. Nearly all of the multi-unit options (i.e. apartment style housing) is located in the Village area. According to the 5-Year estimates, there are 34 units found in structures containing 3 to 4 units, and 30 of those are located in the Village area. Similarly, there are 20 units found in structures containing 5 to 9 units, and all of those are located in the Village area.

Within the past ten years the Rural Edge (formerly known as the Gilman Housing Trust) and Groton Community Housing have rebuilt and restored six historic buildings into 23 low income housing units, four commercial spaces and a new library. While there are vacant single bedroom apartments in town, there is a waiting list for two and three bedroom apartments. There is one elderly housing development, which houses nine elderly/disabled people.

8.3 Future Housing Needs and Issues

8.3.1 Changing Demographic

Given the range of housing options and easy access to multiple job markets, Groton has the potential to attract more families. Those who are drawn to Groton may be looking to enjoy the quiet countryside or to find more affordable housing, despite it being further afield from their place of employment and/or surrounding towns.

While Groton may appeal to families and commuters, the region-wide shift to smaller households and an aging demographic also need to be taken into consideration. In general, family households now comprise a smaller share of all households in the Northeast Kingdom, and Groton is no exception to this trend. This is significant because family households – especially married couple households -- tend to have higher rates of home ownership due to a number of factors, such as dual incomes, better access to credit, and cost-efficiencies from sharing resources. By contrast non-family households now account for a larger share of all households. The vast majority of non-family households are people who live alone. According to the 2010 Census data, more than 10% of Groton householders living alone were 65 years or older. This may have significant implications for

Groton's future housing stock in terms of accommodating smaller household sizes and the needs of those who wish to age in place.

Table 8.2 Groton Households, 2000-2010

	2000 Census	2010 Census
Family households (as a % of all households)	74.6%	70%
With children under age of 18	35.8%	32.2%
Non-family households	25.4%	30%
Living alone	20.1	24.9%
Living alone, aged 65+	9.8%	10.7%

Source: U.S. Census Bureau

8.3.2 Age of Housing Stock

Groton Village has the highest concentration of housing stock (built 1939 or earlier). This is significant because this is where most apartment-type rental units can be found. Aging buildings may have safety issues, such as code compliance or accessibility issues. One way to encourage private property owners to update their rental housing stock may be through tax credits through the Village Center Designation Program. Tax credits are available for code and accessibility work for income-producing properties built before 1983. Although the tax credits are awarded on a competitive basis, they are relatively easy to administer, which means that private property owners may find an incentive to create safe and accessible workforce housing. This tax credit program has been used to create market- rate units in other communities.

USDA offers another option for improving housing stock by offering loans to make homes safer and more accessible (e.g. wiring, roof, energy efficiency, ramps and other accessibility modifications). Home repair loans are only 1 percent with a 20 year-term. Seniors and very low-income individuals may even qualify a direct grant of up to \$7,500 to improve livability. Additionally, qualifying individuals who earn up to \$32,500 a year (or for a family of four, up to \$52,700) may be eligible for home ownership assistance through the USDA Direct Home Ownership program. Loan terms can be as long as 33 years, and interest rates vary from 1 percent to 3.65 percent. No down payment is required. Unfortunately, USDA programs are often under-used. Municipalities (and NVDA) can do more to make people aware of them.

8.3.4 Junky yards

Accumulation of household debris, and hoarding create nuisances and reduce property values, but they also pose public health hazards and threaten drinking water supplies. Enforcement and cleanup can require a degree of tenacity and perseverance. In 2009 the regulation of salvage yards – the outdoor storage of junk, motor vehicles, metal scrap, appliances, etc. – was delegated to the Agency of Natural Resources. ANR's criteria for jurisdiction is any place of outdoor storage or junk, regardless of whether the activity is connected with a business.

Municipalities may adopt salvage or junk ordinances that meet or exceed ANR standards. If they adopt local regulations, they may then request enforcement assistance from ANR's Dept. of Environmental Conservation Salvage Yard Program. ANR will evaluate and prioritize requests based on a number of factors, including whether of the municipality has a duly adopted salvage yard ordinance in place.

Goals:

- To ensure the availability of safe and affordable housing for a diversity of social and income groups in each Vermont community, particularly for those citizens of low and moderate income.
- Encourage new and rehabilitated housing that is safe, sanitary, near necessary public facilities and services.
- Ensure that local regulations continue to provide for sites for multi-family and manufactured housing in locations similar to those generally used for single-family conventional dwellings.
- Recognize the role that accessory dwelling units may play in providing affordable housing, especially those who need to be near cost-effective care and supervision for relatives, elders, or persons who have a disability.
- Promote the orderly development of housing in the Town of Groton.
- Encourage increased density in the village center while maintaining the rural character of outlying areas.
- Facilitate adequate and economical provision of streets and utilities in order to provide housing for all income levels.
- Improve the quality and safety of the existing housing stock.

Planning Policies:

- The Town shall periodically review the Zoning Bylaws to ensure they encourage a vibrant array of housing options and allow for appropriate village-scale development.
- The Town encourages concentrated housing in the Village center to preserve open spaces in outlying areas and best utilize existing facilities and services.
- The Village Center should be suitable to handle increased development; The Town shall study the current water and wastewater infrastructure as a means to this end.
- The character of the Village is best enhanced by encouraging rehabilitation of the existing building stock.

Recommended Strategies:

Strategy	Timeframe	Responsible Parties	Resources
Explore and pursue Village Center designation as a means of improving the existing housing stock.	Short-term (1 - 2 years)	Selectboard Planning Commission	Vermont Village Center Program, NVDA
Explore the feasibility of a Salvage Yard Ordinance.	Short-term (1 - 2 years)	Selectboard, Planning Commission	Vermont League of Cities and Towns, NVDA
Consider hosting a town-wide community pride “spruce up” day	Near Term (2 to 5 years)	Community and Economic	GreenUp Vermont, NEKWMD, Community

with services and support such as lawn moving, painting, and hauling of bulky waste.		Development Committee, Recreation Committee	Club
Sponsor a “Yard of the Month” contest.	Near Term (2 to 5 years)	Selectboard, Community and Economic Development Committee	
Make information about USDA lending programs readily available.	Ongoing	Town Clerk’s office, Library	NVDA, USDA Rural Development

9. ECONOMIC DEVELOPMENT

The people, the landscape, the parks and lakes. Love the Groton motto: Where a small town is like a large family!!!

Love the Groton Farmers' Market.

-- Groton Community Survey

9.1 Groton's Workforce

According to American Community Survey (ACS) Estimates Five-Year Averages (2010-2014), there are 539 Groton residents in the labor force, 518 of which are employed. This figure is higher than the Longitudinal Employer-Household Dynamics (LODES) mapping tool published by the US Census Bureau, which identifies 407 primary jobs held by Groton residents. The discrepancy is most likely due to the fact that ACS estimates identify 59 self-employed Groton residents (in their own unincorporated business), which account for 11.4% of Groton's entire workforce.

LODES uses quarterly employment earnings (W-2s) to show where workers are employed in relation to where they live, which allows smaller rural communities to identify the extent of a local laborshed. Not surprisingly, the vast majority of Groton residents who are not self-employed work outside of the community.

Life in the Northeast Kingdom has long been marked by chronic underemployment and lagging personal incomes. Caledonia County has traditionally had the third highest unemployment rate in the state, behind Essex and Orleans. The Caledonia unemployment has dropped from 7.8 in 2009 (the depths of the Great Recession) to 4.8 in 2015, but it still outpaces the statewide average of 3.7%.

The higher unemployment rate means that Groton residents are more likely to travel far and wide to find work. The most recent LODES data indicate that just over a quarter of Groton residents are primarily employed in Caledonia County, and nearly one-third of Groton employees travel 25 miles or more to work.

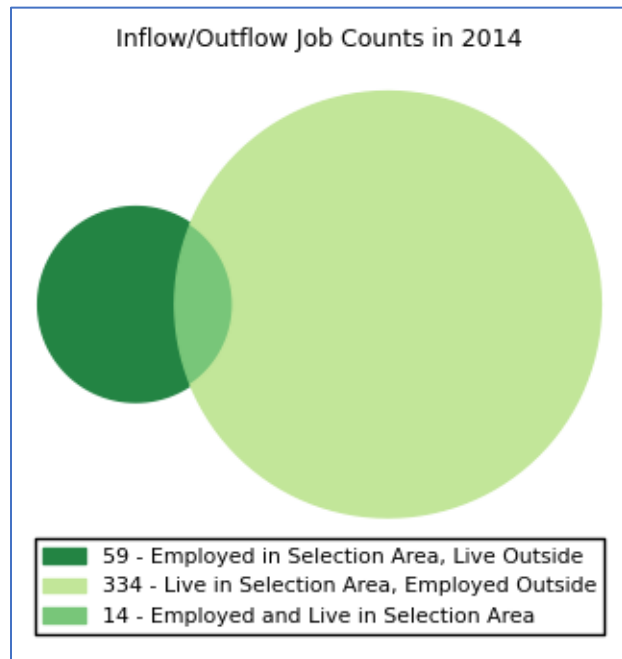
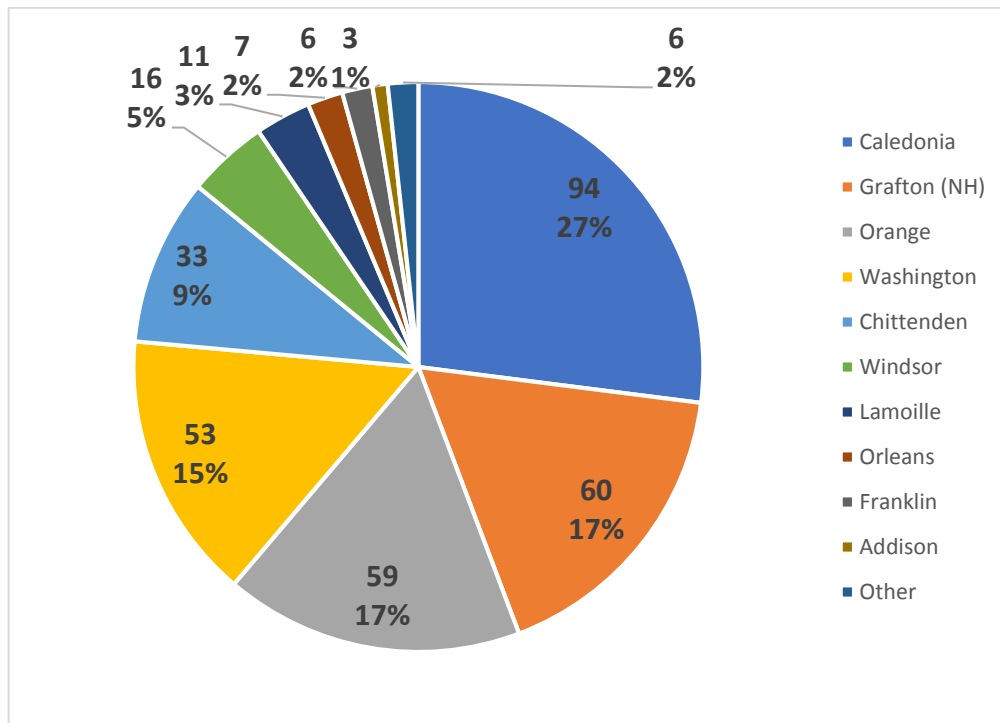


Figure 9.1: Inflow/Outflow

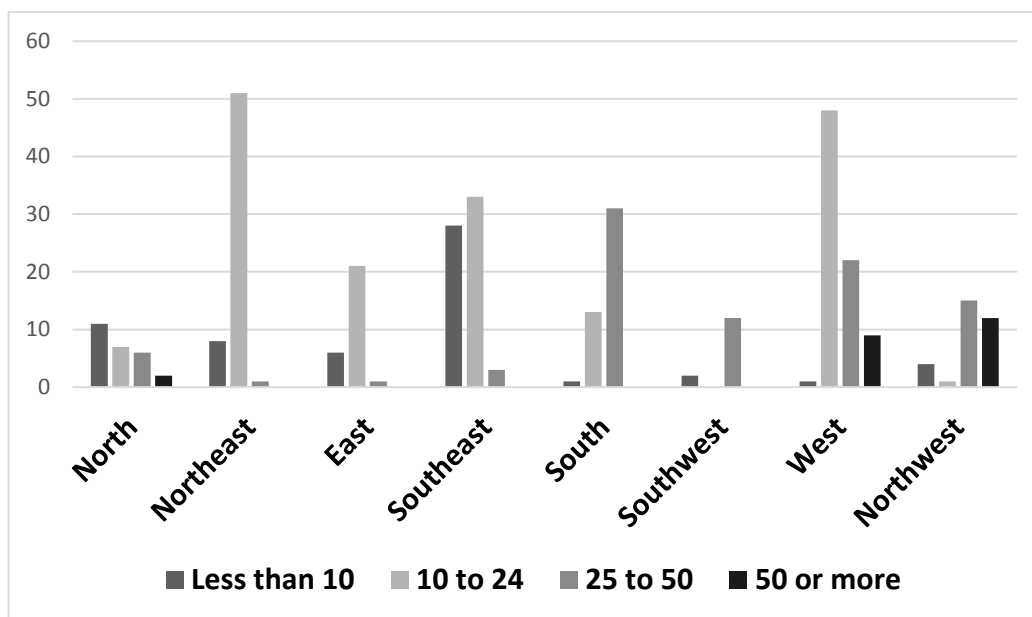
Figure 9.2: Where Groton Residents are Primarily Employed, by County



Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2014).

Groton has access to multiple job markets – St. Johnsbury, Barre, Newbury, as well as Littleton and Lebanon, New Hampshire. While its central location to outside employment opportunities may make the community an attractive place for working families to live, it also leads to disparate commuter patterns, as suggested in Figure 9.3. For the most part, commuting is evenly distributed in all directions, although those who are most likely to travel 50 miles or more to work are traveling in north/northwest (toward the Burlington metro area).

Figure 9.3: Groton Commuters Travel-to-Work Patterns



Source: U.S. Census Bureau, OnTheMap

9.2 Employment Opportunities in Groton

Employment opportunities in Groton are relatively limited. Vermont Department of Labor publishes quarterly covered employment data. As the first quarter of 2016, there are 26 *covered* establishments (i.e. subject to Vermont's Unemployment Compensation Law), and a total of 112 covered employees (which may include part-time). Of the 26 establishments, two are in the government sector, one of which is the Groton Town government. Because most of these private sector establishments are very small, employee data in specific industry sectors are suppressed. The breakout is as follows:

Table 9.1: Covered employment in Groton by Sector

Sector	Employees
Goods Producing (including forestry and agriculture)	39
Construction (a subset of above)	19
Service Providing (including retail)	47
Government	26

Source: Economic and Labor Market Information Division of the Vermont Department of Labor (Note: Employee counts do not necessarily indicate full-time jobs.)

Town-level data on non-employers (i.e. self-employed) is not available, but 31 respondents to the 2016 Groton Community Survey indicated that they either currently or previously owned a business in Groton. Areas of specialization varied widely and included logging, trucking, consulting, farming, and childcare. Of the nine who were no longer in business, four cited either taxes or lack of overhead capital as their reason for no longer operating the business.

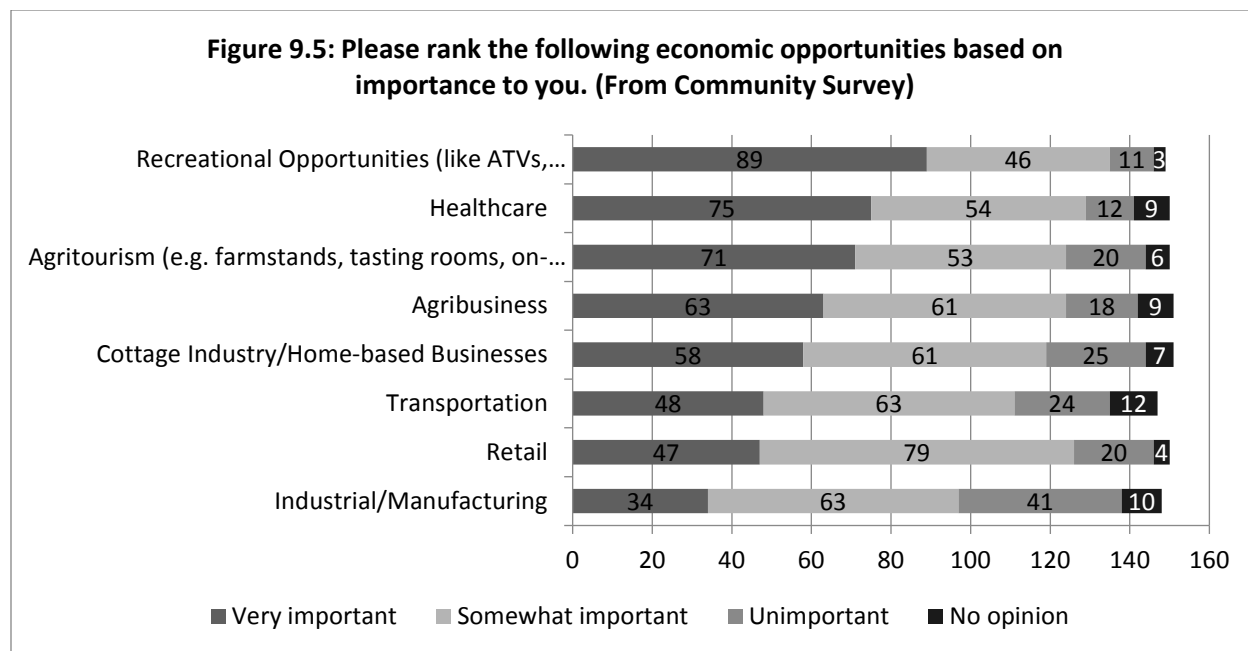
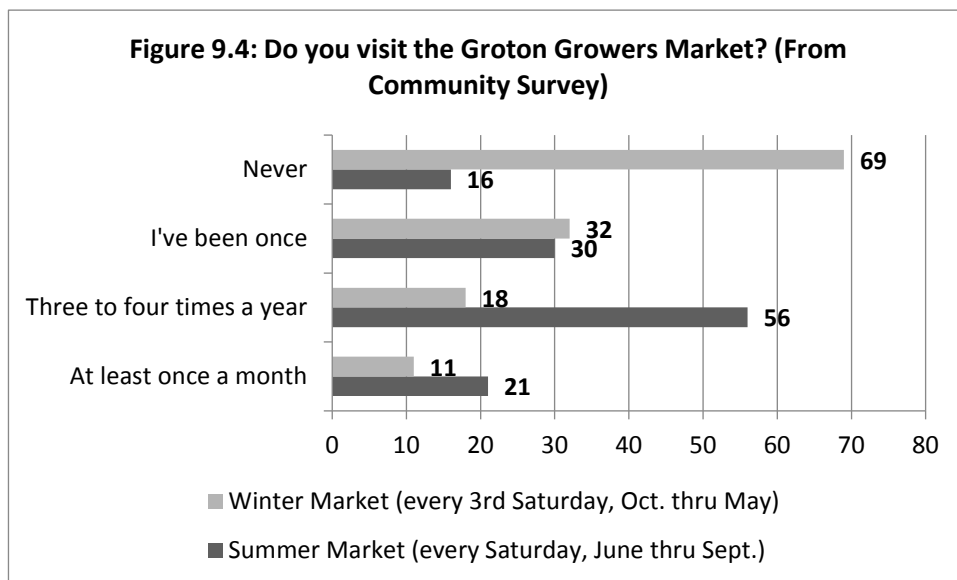
9.4 Planning Considerations for Economic Development

Latest ACS estimates indicate that 171 Groton residents in the workforce have children 6-17 years old, and 62 residents in the workforce have children under the age of 6. More than half of all of these residents are from households where all parents are in the workforce. It's reasonable to assume that convenient and affordable access to childcare may be critical for these workers. Groton's zoning bylaws permit home-based daycares serving six or fewer children as a permitted use of a single-family dwelling everywhere in town, and larger daycares as a conditional use. The Town has had a number of home daycares in the past, but these operations tend to close once the owner/operator's own children reach an age when they are no longer dependent on childcare. The largest daycare provider, New Beginnings, is located in Wells River. It has a capacity of 110. Care.com estimates the weekly cost to be about \$170.00. The Town may need to explore additional ways to encourage childcare opportunities. Groton's highly dispersed commuting patterns may pose challenges for encouraging and coordinating carpooling and ride sharing. This may be alleviated by designating a centrally-located park and ride and encouraging residents to use popular ride-sharing sites, such as Go Vermont's carpooling connection: <http://www.connectingcommuters.org> Possible solutions, such as a park-and-ride in the parking lot of the town offices, as well as an electric vehicle recharging station, are being explored.

The traditional land-based economy is still an important part of Groton's culture and identity. Groton's vast forest cover means that logging and forestry continue to serve as a source of employment to many. And, while dairy farming no longer dominates the community, agriculture and food-related entrepreneurship continues to diversify and expand in the community and beyond. Most recent data from the 2012 Census of Agriculture shows that Caledonia County gained 29 farms from 2007, the largest increase in the region. While the bulk of these farms are relatively small operations (less than 50 acres) there are signs that Caledonia's agricultural economy is diversifying and becoming more profitable. Statewide there were 27 more net profit farms in 2012 from 2007. One-third of this net profit growth came from Caledonia County alone. Providing avenues for continued growth and market access (such as the Groton Growers' Market) will be essential for continued diversification and expansion. While most forms of agriculture are exempt from zoning, Groton's Zoning Bylaw provides for non-traditional agricultural uses, such as on-site processing, tasting rooms, and sales of goods not produced on the farm in order to encourage agricultural expansion.

Groton's zoning bylaw encourages a broad range of services-oriented businesses in the Village District (such as retail), while more industrial uses are encouraged outside the village area on sections of Route 302, where more intensive uses can enjoy good highway access. Hospitality oriented businesses are encouraged throughout the town, including the rural district. Groton's Zoning Bylaw was last updated in 2012 to encourage

agriculture-integrated enterprises. The Bylaws should be routinely monitored to ensure that they site and encourage commercial endeavors of an appropriate scale.



Recreation's contribution to the local economy cannot be overstated. The Groton State Forest contains the largest concentration of state park facilities anywhere in Vermont. These include: Boulder Beach, Big Deer, Kettle Pond, New Discovery, Ricker Pond, Seyon Ranch and Stillwater. There are also a number of other facilities managed by one of the state parks, including Osmore Pond Picnic Area, Owl's Head Lookout and the Groton Nature Center Overlook. The Groton State Park and Forest is just over an hour's drive from Chittenden County, the most densely populated area in Vermont, less than three hours from the Montreal metropolitan area and within a day's drive of more than 30 million people in southern New England and the Mid-Atlantic states. The accessibility of Groton State Forest and other state lands in this area to so many people will make this land area a popular destination in the future for Vermonters and out of state visitors alike. While

it is important to measure the impacts of the local outdoor economy in terms of spending and jobs attributed to tourism and recreation, it is also important to recognize the broader benefits in terms of economic recruitment and workforce development. Research has shown that access to public lands, open spaces, and recreation correlates to higher levels of income and attracts skilled higher wage jobs more rapidly than communities without such amenities.²

Goals:

- To provide a strong and diverse economy that provides satisfying and rewarding job opportunities and that maintains high environmental standards, and to expand economic opportunities in areas with high unemployment or low per capita incomes.
- Economic growth should be encouraged in locally designated growth areas and employed to revitalize existing village centers.
- To maintain and enhance recreational opportunities for Vermont residents and visitors.
- To encourage and strengthen agricultural and forest industries.
- To ensure the availability of safe and affordable child care and to integrate child care issues into the planning process, including child care financing, infrastructure, business assistance for child care providers, and child care work force development.
- Encourage new businesses and services that enhance the economic potential of our working lands, recognizing that tourism and recreation are economic resources.
- Encourage alternate forms of transportation such as carpooling.
- Recognize the important economic and social role recreation plays in Groton and build upon that.
- Attract businesses to the Village that enhance service offering to our residents, especially seniors without access to private transportation. These include personal and professional services (attorneys, hair care, banking), health and dental clinics, restaurants, grocery and convenience stores, and consignment retail.

Planning Policies:

- The Town supports the sales of local agriculture and wood products as they help to keep the Town's working lands viable. The Town will periodically review and evaluate the Zoning Bylaws to ensure that they support agriculture- and forestry-related enterprises that are of an appropriate scale.
- The Town supports local artisans and tourism operators as contributors to Groton's land-based economy.

² Center for American Progress: "The Government Should Begin to Measure America's Powerful Outdoor Economy," January 2015

Recommended Strategies:

Strategy	Timeframe	Responsible Parties	Resources
Explore and pursue Village Center designation which can offer tax incentives to owners of income producing properties in the Village in return for important code and accessibility investments.	Short-term (1 - 2 years)	Selectboard Planning Commission	Vermont Village Center Program, NVDA
Establish a portal on the Town's web site for local businesses.	Short-term (1 - 2 years)	Town Webmaster, Community and Economic Development Committee	
Encourage a bank and doctor to practice in town as well as additional businesses.	Long-term (5 - 8 years)	Community and Economic Development Committee	Vermont Village Center Program, Local revolving loan programs, Small Business Development Center
Ensure that Groton residents have appropriate access to technical assistance and capital, such as business planning through the Small Business Development Center, Working Lands Enterprise Grants, and local revolving loan funds.	Ongoing	Community and Economic Development Committee	NVDA, Small Business Development Center
Support the year-round access to local food, such as the Groton Growers' Winter Market by ensuring adequate access to space and infrastructure	Ongoing	Community and Economic Development Committee, Groton Growers Market	USDA Rural Development
Support the expansion of afterschool programming by working with the recreation committee and supporting the position of a recreation coordinator.	Ongoing	Selectboard Recreation Committee	BMU Library
Encourage participation in Way to Go Vermont.	Annually	Planning Commission, Community and	NVDA

		Economic Development Committee, Energy Committee	
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10. FLOOD RESILIENCE

As of July 1, 2014, all duly adopted municipal plans must contain a flood resilience plan that identifies flood and fluvial erosion hazard areas and designates those areas to be protected, including floodplains, river corridors, land adjacent to streams, wetlands, and upland forests to reduce the risk of flood damage to infrastructure and property; and recommends policies and strategies to protect the areas.

10.1 Existing Conditions

Nearly all of Groton is contained in the Wells River watershed, which drains approximately 100 square miles, ultimately reaching the Connecticut River. It is roughly 22 miles (37 km) long, beginning upstream of Osmore Lake in the town of Peacham. The river flows generally southeast through Osmore Pond, Groton Lake, and Ricker Pond, joins with the North and South Branches in the southeast part of the Town of Groton, and continues southeast through the towns of Ryegate and Newbury, finally reaching the Connecticut River at the village of Wells River.

10.2 Flood Risks in Groton

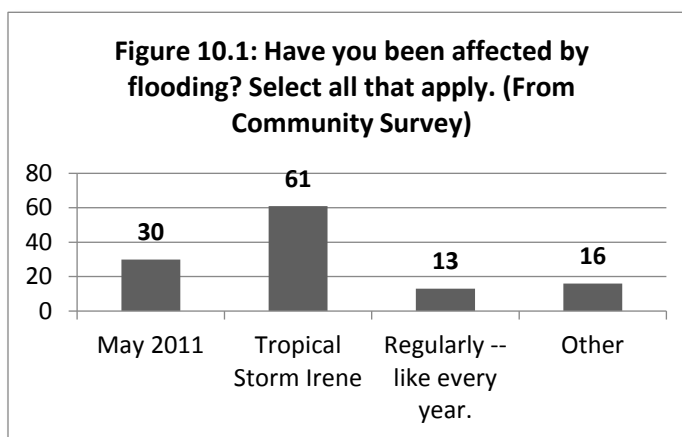
Groton has experienced frequent flooding. The West Branch of Wells River is problem area. Route 302 has had instances with ice and flooding. In 1974, severe flooding took out Route 302. Access in and out of town can become a problem with flooded access routes.

The town also has an extensive history of straightening its streams, a practice that has led to downstream instability due to down-cutting of valley streams and collapse of streambanks. Groton also has many areas with steep slopes in upper watershed areas where minimal alteration of vegetative cover through logging or changing drainage patterns may significantly increase the likelihood of flash floods. Although flash floods may not seem like a large problem, their potential should be recognized and monitored. For example, steep slopes behind properties along Scott Highway often send storm waters onto downslope properties. The Groton Community Center has erected a retaining wall in order to protect the property from sheet flow.

Below is a table that describes FEMA public assistance received from 2004 through 2011 (Tropical Storm Irene). Public assistance helps to mitigate the cost of repair to roads, bridges, culverts, and other forms of transportation infrastructure. Clearly, damage to public infrastructure in more recent years has carried a significantly larger price tag.

Table 10.1: Public Assistance Received Through FEMA

Declaration date	Incident Type	Number of Projects	Federal Funds Received
9/23/2004	Severe Storms	3	\$32,289.50
8/03/2007	Severe Storms	4	\$36,456.09
9/12/2008	Severe Storms	1	\$4,381.57



7/8/2011	Severe Storms	14	\$89,156.12
9/01/2011	Hurricane	27	\$524,113.37

Source: FEMA

According to the FEMA NFIP Insurance Report (January 2015) private properties in Groton have been affected by flooding as well. There are 12 National Flood Insurance Program policies currently in effect, representing a collective insured value of \$1,816,400. Nine of these policies are for structures in the “A” zones (i.e. 100 year flood plain). There have been nine claims paid since 1978, representing a total of \$49,549.

10.3 Floodplains

Floodplains are low-lying areas adjacent to a river channel that become inundated as floodwaters rise up and spill out over a river bank. They provide an important ecological function by storing and conveying floodwaters, reducing downstream flood velocities, and mitigating riverbank erosion. Floodplains also help to protect water quality by filtering nutrients and impurities from runoff, processing organic wastes, and moderating temperature fluctuations.³

Groton’s floodplains are depicted on a FEMA Flood Insurance Rate Map (FIRM) with an effective date of September 27, 1991. This map depicts the Special Flood Hazard areas, which are floodplains that would likely become inundated during a significant flood known as a “base flood.” The base flood is often referred to as the “100-year flood.” “Approximate A” zones (i.e. flood hazard areas without any accompanying data such as base flood elevations) include Groton Pond, Kettle Pond, Ricker Pond, Levi Pond, and Noyes Pond, as well as Beaver Brook, Stillwater Brook, and Stillwater Brooks, portions of the Wells River, Red Brook, the North Branch of the Wells River, and portions of the South Branch of the Wells River. FEMA has produced more detailed data with an accompanying flood study for portions of the South Branch as it converges with the Wells River. The flood study provides base flood elevations (how high the water can be expected to rise in a significant flood event), and the maps delineate the floodway (where the floodwaters run the deepest and the fastest.

Unfortunately, the term “100-year flood” is misleading, because it creates the false impression that a flood of that magnitude will only occur once a century. What the term really means is that the base flood has a 1% chance of flooding in ANY given year. With a one percent annual chance, a structure in the Special Flood Hazard Area has more than a one-in-four chance of being affected by a flood during a thirty year mortgage. By comparison the same structure has less than a one-in-ten chance of being affected by fire over the same mortgage.⁴

Groton’s FIRM is a paper map. Its age and relative lack of detail in some areas make interpretation difficult. A rough digitization shows a significant number of structures that may be located in the floodplain. However, the lack of data in the approximate A zones makes it difficult to tell if many of these structures are actually located in flood prone areas. For example, nearly all structures around Groton and Ricker Ponds area appear to be in the 100 year flood area. Given the fair number of map amendments issued to date (amendments to the flood map that effectively remove structures from the floodplain based on better elevation data), it may be reasonable to assume that not all these structures are actually flood prone. The South Branch of the Wells, the Wells, and the North Branch

³ Floodplain Management Requirements A Study Guide and Desk Reference for Local Officials, FEMA 2005

⁴ www.floodready.Vermont.gov

of the Wells River, may have as many as 30 structures in flood prone areas, and as many as 10 may be located either in or immediately adjacent to the delineated floodway.

10.4 Flood Hazard Regulations

The Town of Groton has participated in the National Flood Insurance Program since 1991, and has administered the regulations based on the data that is contained in the FIRM. The primary benefit of participating in the National Flood Insurance Program is that Groton residents may obtain flood insurance at more affordable rates. Federally-backed lending institutions require flood insurance on any mortgage in the Special Flood Hazard Area, regardless of whether the Town participates in the National Flood Insurance Program. Participation is therefore essential to property owners who are attempting to refinance or sell properties in the flood hazard area. Property owners outside of the Special Flood Hazard Area are would be able to purchase flood insurance, and at preferred risk rates.

Groton's flood hazard regulations are best characterized as minimally compliant with FEMA requirements. For example, the regulations do not prohibit development in the Special Flood Hazard Area, but new development does have to meet certain standards, such as elevation and floodproofing. If an existing residential structure currently in the Special Flood Hazard Area is more than 50% damaged from any cause, the structure is required to be brought into compliance by elevating it to the base flood elevation, prohibiting an enclosed below-grade basement, and allowing for flood waters to flow through through basement openings to reduce hydrostatic pressure. Existing non-residential structures more than 50% damaged would need to be flood-proofed to at least the base flood elevation.

While minimally compliant flood hazard regulations will allow property owners to purchase flood insurance at more affordable rates, the regulations should not be seen as an effective way to minimize flood risks. The minimally compliant standards still allow development in the Special Flood Hazard Area, so it is possible to cut off access to critical floodplain storage, resulting in increases to the base flood elevations and flood velocities to other properties.

10.5 River Corridors

About two-thirds of Vermont's flood-related losses occur outside of mapped floodplains, and this reveals the fundamental limitations of the FEMA FIRMs: A mapped floodplain makes the dangerous assumption that the river channel is static, that the river bends will never shift up or down valley, that the river channel will never move laterally, or that river beds will never scour down or build up.

In reality, river channels are constantly undergoing some physical adjustment process. This might be gradual, resulting in gradual stream bank erosion or sediment deposit – or it might be sudden and dramatic, resulting a stream bank collapse. The losses experienced during the May 2011 storms and Tropical Storm Irene were most often related to the latter. In fact, this type of flood-related damage occurs frequently in Vermont, due in part to the state's mountainous terrain.

Land near stream banks are particularly vulnerable to erosion damage by flash flooding, bank collapse, and stream channel dynamics. The Vermont Department of Environmental Conservation, Agency of Natural Resources, has identified river corridors, which consist of the minimum area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition. In other words, the river corridor provides “wiggle room” for a

stream as its channel changes over time. Keeping development out of the river corridors therefore reduces vulnerability to erosion. Statewide river corridors maps were released in 2015. These maps were developed using remote sensing data, such as valley widths, slope, land use and encompass all streams with a drainage area of two square miles or greater. In Groton, this data includes Beaver Brook, Stillwater Brook, the North Branch, the South Branch, the Heath Brook, and Tannery Brook. A Phase 2 assessment (field work) is currently being completed on the upper Wells, which includes several stream reaches along the South Branch and its tributaries. The assessment should help the town to identify and prioritize potential stream bank stabilization projects.

10.6 Uplands and Wetlands

Proper management of upland areas also plays an important role in flood hazard management. Limiting clearing of upland slopes will help to attenuate flood flows and reduce stormwater runoff. Groton's forest cover, particularly in areas with steep slopes and high elevations (where headwaters are located) should be protected. Conservation easements and enrollment in the Current Use Program may be an effective way to protect existing forested cover.

Wetlands also have the capacity to retain significant amounts of water. The State of Vermont regulates activities in and adjacent to wetlands. These rules apply to the wetlands and associated buffer zones within 100 feet of Class 1 wetlands, and 50 feet of Class II wetlands. Any activity in a Class I or II wetland requires a state permit.

10.7 Emergency Relief and Assistance Fund

The Town has received public assistance for five federally-declared disasters since 2004. When a community requires public assistance, FEMA funds generally cover 75% of the loss. To date, the State's Emergency Relief and Assistance Fund (ERAF) has provided half of the matching funds (about 12.5%), and the town has assumed the remainder of the cost. In October 2014, however, new legislation tied the level of ERAF funding to specific local initiatives to reduce flood-related risks and prepare for emergencies.

For federally declared disasters that occur after October 23, 2014, ERAF will contribute half of the required match only if the town has taken all the following steps to reduce flood damage. Otherwise, the level of State funding will be reduced to 30% of the remaining match, which will usually be about 7.5% of the total cost:

1. Adopt the most current Town Road and Bridge Standards (which can be found in the *VTrans Orange Book: Handbook for Local Officials*).
2. Adopt flood regulations that meet the minimum standards for enrollment in the National Flood Insurance Program
3. Maintain a Local Emergency Operations Plan (adopt annually after town meeting and submit before May 1)
4. Adopt a FEMA-approved Local Hazard Mitigation Plan.

Currently, the town meets requirements #1, #2 and #3.

The legislative changes to ERAF funding propose to address the limitations of the National Flood Insurance Program by providing an incentive: Under ERAF, the Town may receive an increased

state match for federally declared losses, if the town adopts flood regulations that are more aggressive than the minimum standards of the National Flood Insurance Program. These above-and-beyond standards include prohibiting most forms of new development in the river corridor, prohibiting most forms of new development in the Special Flood Hazard Area, and requiring structures that are more than 50% damaged to be elevated to at least one foot above the base flood elevation. All of these measures should be explored as ways to minimize taxpayer expense in the event of future flood-related losses. That aside, several property owners remain significantly affected by flood hazards. All proposed changes to the way Groton regulates its flood hazards must be carefully balanced with the need to protect property owners from losing the use of their land. This may be accomplished with flood hazard mitigation projects (such as FEMA-funded buyouts). It can also be accomplished by ensuring the existing zoning regulations allow property owners to rebuilt or relocate to less flood hazard prone portions of their property.

10.8 Local Emergency Operations Plan

The Local Emergency Operations Plan (LEOP) establishes lines of responsibilities in the critical hours immediately following a disaster. This information is particularly important in coordinating responses through mutual aid towns, and regional and state entities. The LEOP is updated and adopted annually after Town Meeting Day.

10.9 Local Hazard Mitigation Plan

A local hazard mitigation plan prioritizes hazard issues and details next steps for addressing them. It is required by FEMA in order to receive grant funding to reduce or eliminate hazards such as moving or elevating structures or acquiring repetitive loss structures. A local hazard mitigation plan was developed for Groton as an annex to regional plan for the Northeast Kingdom. It was adopted and approved by FEMA in 2005 and expired in 2010. Since that time, the FEMA approval process has become more rigorous. Fortunately, the regional planning commission has been able to secure funds to develop a new Local Hazard Mitigation Plan. This should be commenced immediately upon the adoption of this plan.

Goals:

- Mitigate Groton's flood hazards in the most cost-effective manner possible.
- Minimize the risk exposure and associated expense to Groton tax payers.
- Ensure the Town and its facilities are prepared to meet the demands of the next flood.
- Ensure the Town can receive the maximum outside assistance in the event of the next federally declared disaster.

Planning Policies:

- Identify and protect Groton's natural flood protection assets, including floodplains, river corridors, other lands adjacent to streams, wetlands, and upland forested cover.
- The Town will periodically evaluate Groton's flood hazard regulations to ensure at a minimum, ongoing eligibility for flood insurance through the National Flood Insurance Program.

- The Town recognizes the need to balance flood regulations with the potential impact on property owners. Therefore, the Town prioritizes opportunities to acquire floodprone properties and lands that provide important floodplain function as a compensation for lost use of property. The highest and best use for such lands will likely be passive recreation (i.e. no structures).

Recommended Strategies:

Strategy	Timeframe	Responsible Parties	Resources
Develop and adopt a FEMA approved Local Hazard Mitigation Plan.	Short-term (1 - 2 years)	Selectboard	NVDA
Consider an amendment to Groton's Zoning Bylaw that would provide a waiver to setback requirements so that property owners can locate or relocate structures to less hazard prone locations on the lot.	Short-term (1 - 2 years)	Planning Commission	NVDA, State NFIP Coordinator
Review and evaluate Phase 2 stream geomorphic data, when it becomes available.	Near Term (1 to 3 Years)	Planning Commission	ANR
Maintain and regularly update the Local Emergency Operations Plan.	Annually	Selectboard Town Clerk's Office	NVDA
Continue to meet the VTrans Road and Bridge standards. Participate in regional road foreman trainings and Transportation Advisory Committee meetings to stay abreast of flood resilience measures for the Town's roads and bridges.	Ongoing	Road Foreman Selectboard	NVDA
Continue to update the Town's transportation infrastructure information in the Vermont Online Bridge and Culvert Inventory Tool.	Ongoing	Road Foreman	NVDA
Replace undersized and failing culverts.	Ongoing	Road Foreman, Selectboard	Better Backroads, FEMA, VTrans

Distribute information on strategies to reduce the impact of flood-related losses, including freeboarding and waterproofing.	Ongoing	Planning Commission	FEMA, NVDA, ANR
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11. IMPLEMENTATION

It's a small town. Makes it like family.

-- Groton Community Survey

The town plan is intended to be a guiding document for future land use in the town of Groton. Each element of the plan contains background and history related to that section, a description of current issues of infrastructure for the implementation of those specific recommendations.

By law, the town plan is a living document that is reviewed and updated every eight years. However, the town plan should change and adapt continuously to meet the changing needs of our town. The best way to accomplish this is to maximize community involvement. The Planning Commission will:

1. Solicit the help of those in our community who are interested and can provide insight and suggestions to help shape the town plan.
2. Present ideas and information to the public through public meetings, mailings, special events and the town's website, www.grotonvt.com.

The Planning Commission functions as a land use panel that makes recommendations to guide the growth of our community. The main authority we carry to implement these suggestions is to prepare and submit to the Selectboard zoning bylaws and for their consideration. Therefore, the Planning Commission will:

1. Review the current zoning bylaws in the context of the town plan.
2. Update and amend the zoning bylaws to reflect the current desires of Groton as expressed in the town plan.
3. Apply these bylaws and regulations equally to all citizens.
4. Pursue and encourage non-regulatory options, such as Village Center Designation.

Since Groton does not exist independently of other surrounding communities, the town plan is used as a standard when dealing with issues of development. Act 250 and other state regulatory processes identify the town plan as a standard for review of application. The town plan is important to the development of inter-municipal, regional and state plans and programs. The town plan will:

1. Serve as the review standard for issues relating to Act 250.
2. Work within the goals of the surrounding communities and region while still maintaining the ideals that are important to Groton.

Since no plan can identify and address every issue in detail, the Planning Commission is granted the authority to undertake studies to assess the needs of the community. These studies can include, but are not limited to:

1. Conducting surveys to determine the issues that face our town.
2. Reviewing the current water and wastewater infrastructure.
3. Recommending to the Selectboard appropriate action.

These studies may be conducted by our commission or through outside sources. The commission will:

1. Work with state and federal agencies as well as private consultants as needed.
2. Pursue grants and other funding for these studies to minimize the taxpayer's burden.

The ultimate decision in town matters lies with the Selectboard. The Planning Commission can work closely with the Selectboard to:

1. Guide the town in budgeting and facilities planning.
2. Influence future decisions of the town in the context of land use.
3. Ensure the orderly development of Groton.

Finally, the town plan should provide a snapshot of our town and be used to inform and educate other planning commissions, businesses and anyone else who may be interested in Groton.

12. ADJACENT TOWNS

The town of Groton is located in east-central Vermont and is bordered by eight towns in Caledonia, Orange and Washington Counties. To the north are Marshfield, Peacham and Barnet; to the east is Ryegate; to the south are Newbury, Topsham and Orange; and to the west is Plainfield. It is the purpose of this section to analyze our neighbors' town plans to determine how they fit within our vision of development and vice versa.

Despite the large number of adjoining communities that are spread across three counties and three regional planning commissions, the goals of our neighbors are much in tune with our own. Most plans have in common the following goals:

1. To preserve the rural character of their town by maintaining the historic settlement pattern of the town center.
2. To encourage appropriate development of business and economic activity.
3. To protect the natural and historic features of their landscape.
4. To maintain and improve the quality of air, water and land.
5. And to ensure that public facilities grow sustainably with the growth of the town's population.

The town plans of the communities listed above have been reviewed within the context of how they relate to Groton. There are no issues that would adversely affect our vision of development or negatively impact our community. Peacham and Ryegate are in the region covered by Northeastern Vermont Development Association (NVDA), the regional planning commission and development association that also serves Groton. The Groton State Forest extends into **Peacham**, accounting for about 25% of that town's land area. The Town Plan (adopted in 2012 and will soon expire) articulates a vision to maintain "a healthy and vibrant forest and forestry industry as well as foster wildlife habitat through improved forest practices, long-term stewardship, and protection of the land resource from degradation and fragmentation." **Ryegate's** 2012 Town Plan seeks to "avoid residential subdivision that limits the economic viability of large parcels historically used for agriculture and forestry." One of its traditional centers of development – South Ryegate – is located on a Route 302, a vital East-West connection between the two towns. This corridor is the likely location for much of the "limited growth of light industry, restaurants, stores, and tourist attractions" envisioned for the Town.

Marshfield, Orange, Plainfield, and Topsham all contain portions of the Groton State Forest. **Topsham** has no zoning, but its 2012 Town Plan is focused on maintaining the town's rural character. Its guidelines for growth state that new development should be compatible with historic settlement patterns, maintain functionality of deer wintering areas and keep primary agricultural soils intact as feasible. Similarly, **Orange** has no zoning, but its 2013 Town Plan only encourages intensive development in its traditional centers, East Orange and Orange Center. **Marshfield** does have zoning, and nearly all of its lands bordering Groton (including the State Forest) are in a Forest and Conservation District, where new residential development is only allowed through planned unit development (aka "clustering.") The 2012 Town Plan notes that this district only has 14 single-family dwellings. According to the **Plainfield** Town Plan (adopted 2014) much of the land bordering Groton is in the "Reserve Lands" district, an area with steep slopes, scenic ridge lines and high elevations, lacking good road access, suitable mainly for forestry, low-impact recreation and wildlife habitat. Buildout analyses completed by the Central Vermont Regional Planning

Commission show very limited development potential in this area. **Newbury** has zoning and its most recent Town Plan was adopted in 2015. The town shares a very limited border with Groton, all of which is in the Pine Mountain Wildlife Management Area.

Groton is part of a mutual aid agreement for fire fighting and emergency services; most of our students commute to Blue Mountain Union in Wells River for their education; recycling is managed by volunteers from both Groton and Ryegate, and most resident rely on employment in other communities. Continued communication and cooperation with adjacent communities are critical to maintain these services and to identify and develop new ones.

The Groton Town Plan has been developed in cooperation with NVDA, the regional planning commission in order to ensure consistency with regional and statewide planning goals.

Goals:

1. Maintain open communication with adjacent communities and inform them of our planning activities.
2. Identify and pursue joint services that may provide a greater benefit than if done alone.
3. Review zoning bylaws and subdivision regulations of surrounding communities.