
TOWN OF HOLLAND

2017 TOWN PLAN



Holland Pond

Photo by Rick Desrochers, Northern Dreams Photography

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Introduction and Background

The purpose of this plan is threefold: to comply with the requirements of 24 VSA Chapter 117 with resultant improved opportunities for grant assistance; to assist regulatory agencies in reviewing development proposals in the Town and adjacent communities; and to provide direct guidance to the Town in resolving existing and future issues over which the Town has control.

The Town of Holland is a small rural town with a current estimated population of 689 year round residents (2014 American Community Survey estimate), virtually no true commercial development, and one paved road. Containing approximately 42 square miles in an almost rectangular shape, the Town is located on the Canadian border and abuts the Towns of Derby to the west, Morgan to the south, and Norton and the Unified Towns and Gores of Essex County (UTG) to the east.

The Town of Holland received a grant from the Vermont Department of Housing and Community Development in order to cover the costs of updating the Town Plan, which included contracting with the Northeastern Vermont Development Association (NVDA) to prepare a suite of updated maps and provide a summary of demographic data in support of the Planning Commission's work. The maps consist of:

1. A base map showing such elements as roadways, farms, residences, government buildings and parcel boundaries
2. A map depicting conserved lands
3. A map depicting land cover, consisting of an overlay of the base map on an aerial photograph
4. A map depicting natural resources constraints, including topography
5. A map depicting soils constraints
6. A map depicting the State River Corridors

The maps were provided in large format at a scale of 1 inch equal to 1,000 feet. These maps are available for review at the Town Clerk's office. The maps are also included in reduced pdf format in the appendix to this Plan.

A questionnaire was sent out in 2015 to both residents and taxpayers to get a feeling of where they want to see the Plan directed in the future. Many of the trends are the same as in the prior questionnaire sent out in 2005.

In 2005, The Town was fortunate to have the State Agency of Transportation conduct daily traffic counts at fifteen Town road locations during the summer. These counts were the first fairly comprehensive assessment of traffic volumes available to the Planning Commission. Since then, traffic counts have been conducted on various Town roads in 2007 through 2012: and in 2015 and 2016. This data can be viewed on the Holland Town page on the NVDA website at <http://nvda.net>.

The plan format follows that required by State Statutes, with an appendix provided. While a general statement of objectives and policies follows in the next section, the objectives related to a specific element of the plan are contained in that section. While this plan does address all the required elements, the Town believes that many aspects of certain elements are beyond the Town's control given its small population and financial abilities. As such, the principal focus of the plan is on those aspects which the Town can affect and direct in a viable fashion.

Trends and Issues Since Adoption Of The 2012 Plan

There have been a few changes in Holland since the preparation of the 2012 plan in terms of accomplishing the objectives set out in the plan, growth in the community, and issues facing the Town. However, events outside the control of the Town continue to present challenges.

Principal trends include:

- 1) Limited growth - Since 2010, there have been 6 subdivisions, and 26 new buildings, of which 11 are year-round residences. Grand List data from 2016 shows 394 single-family homes, of which 261 are year round dwellings and 133 are seasonal. Commercial development consists of storage buildings and a couple of new barns.
- 2) Current use - enrollment of acreage in the current use program has increased from 11,017.54 acres in 2012 to 11,199.16 in 2016. The total acreage of land in Holland is 23,040.
- 3) The median value of an owner-occupied residence in 2014 dropped 20% since 2010, according to the Census-Bureau's American Community Survey.
- 4) State-owned land comprises 4,655.30 acres in Town and Holland Pond is 344 acres. In combination with land conserved by the Vermont Land Trust and land listed in the Current Use program, 64% of the land area has development restrictions, resulting in a significant reduction in tax base potential.
- 5) Road damage resulting from the April 2011 storm has been repaired, except for replacing the culvert near Norman and Louise Fortin's, which the Selectboard decided not to do because of lack of funds. Road maintenance continues to be a challenging issue.
- 6) Enrollment in the Elementary School increased from 34 in 2015/2016 to 42 in 2016/2017.
- 7) Costs for the provision of Town and educational services has grown dramatically. The combined Town and School budgets has grown to \$1,630,159.90 in 2016.
- 8) Outside influences such as continued mandates from State and Federal agencies, and likely reduced funding from these governments have the potential to negatively affect property values and require additional local funding.

From these trends it is apparent that the increase in property taxes necessary to fund services combined with the lack of additional development or alternative funding sources creates the potential for a severe financial crisis in the near future.

General Statement of Objectives, Policies, and Programs

The following presents the policies and objectives and implementation recommendations (programs) for the Town. As noted, there are numerous objectives and implementation programs discussed in each plan section. Only selected items are listed in this section. Please refer to each section for a comprehensive listing.

Policies and objectives:

- 1) Maintain and protect the generally rural character of the Town
- 2) Address issues in a proactive fashion
- 3) Retain current rights of way
- 4) Improve roadway conditions
- 5) Provide Town services in a cost effective manner
- 6) Minimize environmental impacts of existing and future land uses
- 7) Continue to operate the Elementary School at its current high level of quality
- 8) Interrelate with adjacent communities in a proactive fashion
- 9) Support accepted agricultural and forestry practices
- 10) Support affordable housing initiatives
- 11) Take advantage of outside funding opportunities for planning, maintenance, and capital improvements

Implementation programs:

- 1) Explore the need for and options for land use regulations.
- 2) Obtain a viable long term source of gravel and sand.
- 3) Evaluate road conditions and needs, possibly through retention of an outside consultant.
- 4) Prepare a long range road maintenance plan.
- 5) Prepare a capital budget.
- 6) Discourage additions to the Town roadway system.
- 7) Encourage volunteers to prepare grant applications.
- 8) Encourage all construction to utilize appropriate erosion control methods.
- 9) Continue support for the Historical Society.
- 10) Continue working with adjacent communities to provide cost effective services.
- 11) Initiate a dialogue with abutting communities in Canada.
- 12) Monitor and provide input to adjacent communities' planning processes.
- 13) Explore the feasibility of joining the National Flood Insurance Program.
- 14) Update in a timely manner the Town's All Hazard Mitigation Plan and Basic Emergency Operations Plan to ensure matching funding if available from State and Federal Agencies.
- 15) Obtain a planning grant to allow implementation of this Plan.
- 16) Engage the community to take advantage of citizen skills and ideas in upgrading Town services and finding innovative ways to address the potential fiscal crisis.
- 17) Develop and implement a financing plan for renovation/replacement of the Town

garage.

Land Use

As noted, Holland is small rural community generally located away from regional activity centers and major roadways. The Town contain approximately 42 square miles (27,047 acres) consisting of a mixture of gently rolling hills, lower swamp lands, farmland, and steep ravines adjacent to numerous streams. The only significant body of water is Holland Pond in the northeast, along the west side of which are numerous summer camps, but limited year round residences. The Pond is essentially surrounded by the Bill Sladyk Wildlife Management Area, which contains 4,655 acres or roughly 17% of the town.

Overall development in Town is limited and consists principally of year round homes (261), seasonal homes (136), and working farms (14). There is not true commercial development, rather all businesses consist of home occupations. Given the limited current development, the significant majority of land is open fields, woods, or swamps. This one church in what was once the Town center, the Historical society building on Gore Road, and three public buildings (Town offices, Town garage, and Elementary School). The Land Use Map shows the existing development patterns. Over the last few decades, Holland has grown slowly to a current population of 600+ year round residents with the only development being residential in nature. There was a number of questions in the 2015 questionnaire concerning growth-see appendix. Key responses included 58% saying the Town is developing about right versus 12%-too fast: 39% felt the Town should not encourage residential growth: 48% felt the Town should not encourage commercial growth; 69% believed commercial development should be limited to certain areas. Based on the questionnaire and resident input to the Commission, it appears the general attitude in Town is to keep things generally as they are. 67% would like the town to continue to be a low density, primarily open space and agricultural community.

Holland has no local land use regulations. Zoning was adopted in the early 1990s, but soon voted out due to significant negative reaction. In preparing the 2007 plan, the Planning Commission was fortunate to obtain the services of the NVDA for inventory and mapping aspects. The mapping, which has been updated for this current Plan, is still relevant and has been extremely helpful in understanding land use patterns and development constraints. All maps are in the appendix. Key aspects include:

- 1.) The Wildlife Management Area contains one sixth of the Town on which no taxes are paid and which is unavailable for development. The Town receives a yearly payment in lieu of taxes (PILOT) from the State of Vermont. In Fiscal year 2016 the Town received \$9,003.25 for the Wildlife Management Area.
- 2.) Approximately 11,199.16 acres were in the current use program in 2016 (farming and woodland) which represents close to 39% of Town outside the Wildlife Area.

2,725 acres are land trust/conservation properties unavailable for development all but 809 acres being included in the current use land above.

- 3.) 7,488 acres outside the Management Area are prime agricultural land (Prime and Statewide importance).
- 4.) Many of Holland's parcels are unsuitable for on-site septic systems due to ledge and soil type. Based upon pre 2002 standards, outside of the Management Area, 8221 acres are not suited, 2637 are marginally suited, are marginally suited, and only 61 acres are well suited.

Agriculture

Agriculture has historically helped to characterize Holland and continues to today. As noted above, Holland has 7,488 acres of agricultural soils, consisting of both nationally-rated "Prime Agricultural Soil" and "Statewide Important Soils." (See Soils Map in the Appendix).

According to the State of Vermont Department of Taxes Annual Report based on 2015 Grand List data, a total of 74 parcels comprising 10,072 acres in Holland were enrolled in the Use Value Appraisal Program (Current Use). 5,732 acres of this total was enrolled as forest and 4,290 acres were enrolled as agricultural land. The Town's 2016 Grand List indicates enrollment has increased. The Use Value Appraisal program allows landowners with enrolled acreage to pay property taxes based on the use value rather than the fair market value. Enrolled farm buildings are completely exempt from property taxes. In exchange, the landowner has to keep the property in agricultural or forest production. The municipalities receive an annual payment from the State called the "hold harmless payment" to make up the difference between the municipal taxes paid at use value and municipal taxes that are based on the assessed fair market value. The State Current Use Advisory Board establishes "use values" every year. In 2015, the use value for agriculture land was set at \$289 an acre, and forest land was valued at \$131 per acre (forest land

that was greater than one mile from a road was valued at \$98 per acre.) Enrolling land in current use is therefore particularly beneficial to property owners in areas where market prices are high in relation to use value.

Based on the 2015 Holland Grand List, there were 15 parcels categorized as "farm." The Census Bureau's 2014 American Community Survey estimates that 59 workers in Holland (about 17% of the employed population) were employed in "Agriculture, forestry, fishing and hunting."



Page Farm, Holland Pond Road

Photo by Rick Desrochers, Northern Dreams Photography

Over time changes in technology, government regulations, and plant and animal genetics that changed the nature of agricultural business in Vermont affected Holland too. The most obvious change that occurred about 1960 in Holland was the requirement that farmers install bulk tanks. This change caused several farms to leave dairying. Those who remained generally increased in size in order to repay the cost of the investment in a tank. A 60 cow farm would have been considered a big dairy at that time. The increase in size also involved more hired labor for many farms. Since that time, larger farms have made it more difficult to get started in dairying, since the investment in land, equipment and livestock is so much greater. Larger farms also meant more specialized operations. Selling potatoes, eggs and forest products have become less common for commercial dairy farms. At one time, farmers could have their eggs picked up once a week for marketing. Another management change is the introduction of artificial breeding, which allowed a rapid advance in genetics and milk yields. The same land farmed thirty years ago now produces much more milk for market, due to improved cow potential and new cropping practices. Government programs, such as those of the Natural Resources Conservation Service (formerly Soil Conservation Service), have changed regarding wetlands, water quality, wildlife habitat all of which affect the viability of a farm.

As average farm size increased, most land from farms in Holland that quit farming was taken on (either purchased or rented) by a neighboring farm. Many farms have gradually enlarged their fields by cutting hedgerows, and burying stone walls to fit the new larger equipment. Some smaller fields and land near the edges of larger fields have been abandoned because of this larger equipment. The introduction of herbicides in the 1950's (eliminating the need for repeated cultivation) as well as the development of new short-season corn varieties allowed farmers to expand their acreage in corn. For hay crops, one of the biggest changes has been the switch from hay to chopping, reducing the labor requirement and allowing farmers to handle larger acreage of forage crops and improving the overall feed quality.

Although few if any farms still milk in upstairs wood stables, most farms in town have built new downstairs stables during the past three decades. Others have built milking parlors, allowing one person to milk more cows more efficiently. Most farms have added heifer barns or equipment sheds, and some have built free stall barns to replace old stanchion barns. Manure management has advanced from “the wheelbarrow to the barn cleaner to the manure pump and pit.” Going from bag to bulk for both grains and fertilizers, with more equipment for handling has helped reduce manual labor. The chainsaw and skidders or tractor-mounted winches have replaced crosscut saws and horses, allowing many farmers to cut their own firewood and sugarwood more quickly, and to sell more wood for extra cash. These equipment changes allowed fewer people to handle more acreage and more cows.

Sugaring is a traditional spring activity. Some producers have expanded their operations, building new sugar houses to handle the increased volume. Some have switched from wood to oil fired evaporators to reduce the amount of fuel handling. Others have left sugaring, due to the unavailability of family labor. More non-farmers have begun sugaring operations in the past few decades. Most sugarmakers now use plastic tubing instead of buckets to collect the sap.



Hollandeer Farm

Photo by Rick Desrochers, Northern Dreams Photography

Currently there are farms in nearly every portion of Holland, except the eastern portion of Town where the Wildlife Management Area is located, and in areas of steep slopes. These widespread open spaces provide scenic beauty to the town.

There are several active working farms in Holland including the Nadeau Family Farm on Gore Road, “God’s Country” Farm on Fortin Farm Road, Brian Champney Dairy Farm on School Road, the Andre Morin Dairy Farm on Valley Road, and the “Hollandeer” Farm” on Stage Coach Lane. In addition to farms, there are many who use their land to raise gardens or a few animals, thus contributing to a subsistence type of agriculture or as a hobby. There are also several former farms whose land is still kept open and productive (rented, leased or with agricultural rights owned by farmers).

The combination of working farms and productive land contributes to the open land in town. Holland residents value the influence of agriculture on the character of their town, and would like to see it maintained in the future. The following trends are likely to have an influence over the future of agriculture in Holland:

- Larger machinery will be required to reduce labor requirements.
- Open land will continue to decrease as larger machinery makes some fields impractical to work, and corners of fields are rounded off since larger equipment is harder to maneuver into tight corners.
- Farmers will continue to switch from manual forage handling (small hay bales) to silage or to large round hay bales
- Farms will buy good tillable land only, rather than entire farms including woodland, as the price and taxes are so high that investments in land cannot bring a positive economic return.
- Some farmers may diversify or find a second income to keep the farm going. Diversification can allow farmers to tap into markets for locally grown foods and or value added food agriculture, i.e. manufacturing processes that increase the economic value of a primary agricultural commodity.
- As the retail value of land continues to rise, farmers will face greater pressure to sell due to much higher development value compared with income from agricultural production and high taxes on their land

- Farmers practicing agriculture in the manner traditional in Vermont for the past several decades may be able to find new opportunities as interest in supporting and expanding agriculture grows in Vermont, the Northeast Kingdom, and directly around Holland. Those planning to meet this interest recognize that additional strategies (changes in regulation, training, network development, etc.) will be required to gain existing and new farmers access to affordable production inputs and expanding markets in value added and local foods.
- Planning organizations such as the Farm to Plate Initiative and Center for an Agricultural Economy also recognize that more land suited for agriculture will need to be protected in order to make way for agricultural expansion. Conservation programs, any potential zoning implementation and improvement of the Current Use program have been suggested as ways to ensure protection of important agricultural lands.

Overall land use planning: As noted planning has not been a major priority in Town and some of the information available to formulate the 2012 and this plan is the first such information obtained. Planning is becoming more a necessity in light of the issues facing the Town as discussed throughout this plan. The Town needs to support the planning process both through financial backing and through retention of volunteers.

Future development: Future development in Holland is severely constrained by natural conditions and ownership patterns. The Natural Resources Constraints Map, showing locations unavailable or unlikely to develop significantly, illustrates this point.

As shown on this map, there is a Source Protection Area (SPA) for the public water supply to the Holland Elementary School. The use of land in the SPA can affect the water quality of the public water system just as it can impact private wells.

While growth has generally been moderate over the past few decades, at this time, the Town believes residential growth may occur in any location that can meet State requirements. It is noted that according to estimates provided by the Census Bureau, the rate of growth in population and housing in Holland has exceeded that in Orleans County as a whole (see Housing section of the Plan.)

Strictly commercial development (unassociated with home business) should be limited to properties abutting the Valley Road; however it would not be appropriate for new industrial uses handling hazardous waste to locate in the SPA. The farming operations are a valuable resource from both employment and character of the Town points of view. The Town should support through whatever means become available the retention of these operations.

Land Use Regulations: As noted, Holland does not have local land use regulations and this plan does not propose adoption of such. Instead, the Town relies on state regulations. It is expected that the elements of this plan will be utilized by those regulators. In addition, the

Planning Commission needs to further explore the desirability among residents of methods to maintain the current character of Holland, methods to promote growth in appropriate fashion, and opportunities to tailor regulations to the Town's specific needs.

Gravel: The NVDA prepared a map showing sand and gravel locations in Town. Unfortunately, there are only four such locations outside the Management Area, of which only one may be a viable source of future material for Town roads. Lack of gravel is a significant issue as discussed in the Transportation section.

Towers: A variety of towers are a possibility. These include residential wind generators, commercial generators, and communication towers. The town supports all private wind generators for individual residential use. Concerning commercial wind generators, the Town has developed a position on such facilities as noted in the Energy section. Communication towers, if the need and future viability of these is demonstrated, co-location on existing structures is a viable and desirable alternative.

Land Conservation Policy: Important agricultural soils, cultivated farmland and forested areas, including that enrolled in Current Use (see map), are inappropriate for the siting of large-scale commercial/industrial development occupying more than 2 acres of land, given the desire to retain the town's rural character and the value of this land for sustaining the local economy.

Objectives:

1. Take appropriate steps to maintain and protect the character of the Town.
2. Continue to plan for the future of the Town in a proactive fashion.
3. Develop the necessary mechanisms to allow viable short and long range land use planning.

Implementation:

1. Support through appropriate means local farming operations.
2. Explore option for regulatory mechanisms to address land use concerns.
3. Explore the feasibility of joining the National Flood Insurance Program.
4. Obtain planning grants to implement the objectives of the Town Plan.

Economic Growth

The Town of Holland's Economic base is dependent on the surrounding communities and counties. Holland operates primarily as a bedroom community for the great Newport/Derby area, which provide the majority of jobs for our residents. Since the last town plan Derby has seen a marked increase in business development (including a Super Wal-Mart and new facility for Louis Garneau) along the Derby-Newport road, a short 15 minute ride from Holland. These existing developments and any subsequent developments in the surrounding area will surely put some pressure on Holland to develop in some capacity. Increasing the number of businesses in Holland has the potential to provide more tax revenue for our fiscally strapped town. It is our hope to support and work with any new businesses with the goal of helping their business to align with the Town Plan.

Currently there are a handful of commercial enterprises in town, a self-storage facility, auto mechanic, trucking, among other small home based businesses. For many existing and future home-based business access to high speed internet has become primary infrastructure needed to enable access to wider markets. Further working from home is a reality to an increasing percentage of the American population, increasing at 7% over the last ten years. As the town moves forward it should explore ways of providing reliable inexpensive access to faster high-speed internet. Currently the town's internet is provided by Fairpoint Communications (DSL), satellite and cell phone networks. The town should determine the average current speed of high speed internet and then develop a series of goals to increase that speed by the time of the next town plan.

Additionally Holland is the home to numerous agricultural enterprises, primarily conventional dairy. The conventional dairy industry has been falling on difficult financial times over the years and continues to be a difficult business to sustain. Further citizens of the town repeatedly express their desire to see the town remain a primarily rural and agricultural town with stereotypically beautiful Vermont pastoral landscapes. Increasingly the town has seen woodlots and fields plowed over for corn production. Additionally where there were once fields of cows dotting the landscape; our bovine buddies have increasingly been confined to stalls and rarely seen to anyone outside the farm. In order to maintain and or improve the town's economic resource as a scenic pastoral agricultural town, the town should encourage farmers to diversify and make use of the existing landscape. The town's economic base could benefit from these farmers diversifying away from commodity markets to more specialty food markets such as Kosher or Halal meat production, specialty food production, or developing an Agritourism part to their farm. There are many agricultural community loan programs available to communities in Vermont, the town should explore the option of developing such a program to help our town's

existing or future farmers to diversify their agricultural holdings adding to our town's character as a scenic rural agricultural town.

Objectives

1. Develop a system of support for new businesses in town to help said business align with the Town Plan.
2. Determine baseline internet speeds for town, and develop a plan to increase the speed by the time of the next Town Plan.
3. Support ongoing agricultural enterprises in town, while providing support to farmers seeking to diversify their agricultural business through researching the potential for community agricultural loan programs.

Transportation

Transportation is a significant issue in Holland. The only viable methods of transportation are by private or business vehicles. The area mass transit system, Rural Community Transportation (RCT), does not serve the Town on a regular basis, with service provided via an on-call system only. There are no plans to upgrade RCT service at this time. As such, with the exception of a small portion of Vermont Route 111 in the southwestern portion of Town (to which there are no direct Town road connections), all travel occurs on Town roads. The Land Use/Transportation Map shows road locations and names. As can be noted from the map, the only roadway connections to adjacent communities occur to the south (Morgan) and west (Derby). See the Energy section of this plan for a discussion of transportation energy goals, and the importance of agricultural lands for providing the opportunity for the cultivation of biofuels.

The consensus from the results of the 2015 Town survey is the overall road conditions are poor. Eighty-nine percent of questionnaire respondents felt the Town should develop long range plans for maintenance and improvement of Town roads (4% no and 5% undecided). Concerning creation of a capital budget for road improvements/equipment, 81% answered in the affirmative, up 8% from the previous survey. 2% answered no with 14% undecided. This latter percentage likely reflects uncertainty regarding exact components and costs of a capital budget. Also according to the survey quality of roads was the second largest concern to respondents at 18% only behind taxes being too high. There was also a question posed about the impact of large agricultural equipment, whether or not it is an issue on Town roads. The results were 42% yes, 35% no, and 17% undecided. The majority of “yes” responses were accompanied by comments primarily concerned about the large agricultural vehicles impact on Town Roads.

With the exception of Valley Road, some of the approaches to this road, and RT 111, all roads in Town are gravel. The classification of roadways (Class 1 through 4) is presented in the appendix. Key aspects include:

- 1) There are approximately 46 miles of roadways (excluding Class 4) in Town, of which Route 111 comprises only .14 miles.
- 2) There are 10.6 miles of Class 2 roads in Town comprised of Valley and Gore Roads.
- 3) Portions of some of the Class 3 roads are functionally Class 4.
- 4) There are approximately 5 -miles of legal trails.

The Town was fortunate to have the Agency of Transportation (VTrans) perform machine traffic counts at fifteen Town road locations in the summer of 2006, and traffic counts have been conducted on various Town roads in 2007 through 2016. This data can be viewed on the Holland Town page on the NVDA website at <http://nvda.net>. Since the culvert assessment in 2006 by NVDA provided condition and replacement recommendations the town has replaced and/or upgraded approximately 65 culverts with more replacements to come. The Town also replaced 2 bridges on Holland Pond Road in the past year with an expected life of 60+ years.

It is clear that the Town’s roadway burden is significant. This is demonstrated by the concept that,

with approximately 509 land parcels in Town and 46 miles of roadway, each mile of road is financed by roughly eleven (mostly residential) parcels. This compares to rates of one mile to over thirty parcels in both Derby and Morgan. It is clear that the Town needs to take timely action to address the road issues, and that resolution of them will require increases in expenditures and funding sources beyond those historically used. The following discusses the many aspects of transportation which directly affect the Town.

Functional Classification: Functional classification is a hierarchical system of classifying roadways based upon the functions they perform. These functions range from carrying traffic through a region to collecting traffic from local streets traveling to other land uses in the region or local area. Design standards, access control, and maintenance are more stringent and important the higher the function of the road. Given its size and location, Holland is not truly a part of the regional transportation system. The functional classification presented below represents the important functions of Town roads. There are no true arterial roads in Town. Based upon the Regional Plan, the Town has one major collector: Vermont Route 111. The Town concurs with this designation, but, from a Town perspective, believes that the Valley Road also performs a major collector function considering its volumes, the overall access it provides to much of Holland, and through traffic function between Derby Line Morgan/Island Pond area. Based on a review of traffic data and local knowledge of roadway usage and travel patterns, there are a number of minor collectors in Town which carry the principal traffic to other communities in the area. These are: Gore Road, Mead Hill Road, and Bates Hill/Lackey Road. While other roads in Town may have higher volumes than these at certain times of year, they do not provide the function of carrying traffic to and from multiple areas of Holland or adjacent Towns and thus would be classified as local roads.

Road Maintenance: As noted, road maintenance is a significant issue, particularly as it relates to the gravel roads. Valley Road is the only paved road, which requires a large investment on a regular basis. There is no reason at this time to pave any additional roads.

The Municipal Roads General Permit was created as part of the Vermont Clean Water Act in 2015. This was intended for all municipalities statewide to reduce stormwater related erosion from both gravel and paved roads. Road runoff contributes to sediment and phosphorous loads in all waterways. The Town will need to develop and include in its 5 year road plan how to not only stabilize but bring our road drainage systems up to basic standards as identified in Act 64. This plan shall include a road network inventory and identify priority road segments that run into surface waters via ditches, culverts, or other drainage structures. The Town will then report the road segments that meet and do not meet the MRGP standards to the Department of Environmental Conservation. These segments of road that do not meet the standards will then have a remediation plan developed and an implementation scheduled by the Town. Funding can be applied for by the Town for the inventory and remediation process through the Better Back Roads Program. VTrans Maintenance District, NVDA and Vermont Local Roads can also provide the Town with technical assistance. The Town cannot apply for MRGP coverage until 2018 at the earliest, but until then the Town should begin identifying and prioritizing road erosion sites that may impact waterways and begin implementing best management practices for our roads. Parts of the Hazard Mitigation Evaluation will be addressed through this new regulation

and can be seen in the Appendix.

Among the steps the Town can take to improve the maintenance situation are:

- 1) Ensure sufficient personnel are employed to perform maintenance in a timely and effective manner.
- 2) Continue to ensure that new access meets appropriate standards and consider addressing existing access problems -see access discussion below
- 3) Obtain a viable long term source of gravel - see gravel discussion below
- 4) Provide training for all road personnel to ensure they are familiar with and competent in appropriate techniques of road maintenance, i.e; grading, ditching and drainage
- 5) Prepare a five year plan for roadway maintenance and update this plan yearly. Key elements of this plan could include: prioritization of roadways based upon function, traffic volumes, and condition; identification of the specific improvements needed on these roadways; assessment of specific cost estimates for each section; analysis of hiring outside contractors to do some of the work; identification of opportunities to stage work over time such as drainage improvements one year, followed the next by gravel; development of specific estimates of gravel amounts needed by road section; identification of potential sources of gravel; and preparation of a specific yearly budget for the improvements.
- 6) Consult with other area towns that have a similar road structure as to how they maintain their gravel roads

Ancient Roads and Rights of Way: Unfortunately, the Town did not make any decisions regarding its ancient roads by the required 2009 deadline, and, as such, has lost any potential rights in such roadways.

Park and Ride: Given the small population of Holland, a Park and Ride site may not be well-utilized. However, as most residents go to other communities for employment, it is possible such a site would prove beneficial. The Town should explore the need for a park and ride site through discussions with VTrans, as part of another Town wide questionnaire, and through review of possible sites. While the Town garage is a feasible site being centrally located and publically owned, it may not be an appropriate location as travel out of Town occurs to the west and south. (See “Work Destination Report” in appendix).

Gravel: A significant problem with maintaining the Town roads is the both the lack of and cost of gravel. The Town has no sand/gravel pit and thus must haul in material for both winter sand and gravel. This results in increased costs due to purchase and haul time. In order to adequately maintain Town roads, additional funds must be allocated for gravel. The Town needs to seriously explore the opportunity for purchase or long term lease of a pit or other long term source of gravel. This pit needs to be located in Town (unlikely given the extreme lack of such deposits) or in a nearby community, from which hauling costs would not be excessive. Without a viable source of gravel, the roadways will not be able to be maintained in the manner consistent with both safety needs and the desires of residents.

Roadway Reclassification: There are two particular issues concerning reclassification. Firstly,

Class 2 roadways provide the greatest State transportation aid. At this time, Valley and Gore Roads are the only such roadways. State regulations allow a maximum of 25% of a Town's roads to be designated Class 2. As such, the Town cannot add Class 2 mileage as approximately 22% of the current roadway mileage is so classified. Mead Hill Road, given its function, 4 rod width, volumes, and connection to an adjacent Town, would be a viable candidate for Class upgrading. After speaking with a legislator they don't see any movement on increasing the percentage for Class 2 roads partly due to the State's current fiscal situation. They did comment that it may be a conversation for a later date. Portions of Town roads 11 and 27 have been reclassified to legal trails alleviating cost for maintenance, culverts or bridges. The Town should continue to look at other parts of Class 3 and 4 roads that may be able to be transitioned into legal trail so as to relieve the Town of added maintenance cost.

Access: The Town currently requires access permits with culverts where needed when a new driveway is proposed to a Town road. This process should obviously continue, with particular attention paid to access to the collector roadways to ensure safe and effective operations on these more important roadways. The Town may also want to explore a program to address situations where existing access points need a culvert to reduce erosion, but do not currently have one. Elements of such a program could include identification and ranking of those driveways and cost sharing between the Town and home owner in their installation. It is possible that such a program would prove cost effective through savings in gravel and maintenance needs caused by erosion at these locations.

Capital Budget: The Town should have a capital budget plan, particularly as it relates to roadways. Elements of this plan should include provisions for purchase/lease of a gravel pit, costs associated with ongoing gravel or pit acquisition as called for in the maintenance plan above, a financing plan for renovation/replacement of the Town garage and timely repair and/or replacement of Town equipment.

Road usage: Given the significant need for and costs of road maintenance, the Town should take steps to limit increased usage and create effective traffic patterns. Such steps could include: 1) the continued ban on ATV and snowmobile use of Town roads, an acknowledged small component of road wear (it should be noted that this is a somewhat contentious issue and all aspects of the ban need to be reviewed. It is possible that a mechanism may be created to allow usage by ATVs for work purposes), and 2) discussions with major road users, such as home businesses and farmers, about their traffic patterns. This latter might allow the Town to make certain road upgrades that could reduce overall travel distances for these operations resulting in lower maintenance costs.

New Roads: The Town should not discourage new roads but should make sure they are built up to current state standards. The Town currently requires any new roads to be brought up to certain standards prior to acceptance for "ownership" and maintenance. The Town should review current standards to determine if improved standards would be appropriate in light of the current roadway situation.

Pedestrian/Bicycle Facilities: Given the rural nature of Holland, there is little the Town can do to improve services for these users. Any future road construction on the Valley Road may present

the Town an opportunity to ask for extended shoulders as to provide a safer road width for bicycles and pedestrians. The School has provided bicycle racks as needed for its students and staff.

Objectives:

- 1) Ensure a viable transportation system for all residents and businesses
- 2) Provide safe effective traffic flow on all roadways
- 3) Address Statutory responsibilities in a timely fashion
- 4) Retain all current rights of way
- 5) Address transportation issues in a proactive and cost effective manner
- 6) Inventory road network and identify priority segments that are impactful or have the potential to impact local waterways through storm water erosion; also develop ways to maintain and stabilize road drainage systems.

Implementation:

- 1) Obtain a viable long term source of gravel/sand for the Town
- 2) Employ sufficient personnel to effectively maintain roadways and provide them with appropriate training
- 3) Prepare an evaluation of road conditions and needs, possibly through retention of an outside consultant
- 4) Prepare a long range maintenance plan, including keeping/bringing our road drainage systems up to meet standards under new Municipal Roads General Permit, part of Act 64. Use Better Back Roads to help with inventory/remediation
- 5) Retain all existing Town rights of way
- 6) Explore opportunities for a Park and Ride site
- 7) Continue to work with State Legislators on possible ways to allow additional road mileage to be upgraded to a Class 2 designation
- 8) Continue to identify “unneeded” Class 3 or 4 roads and reclassify them to legal trails
- 9) Review access standards and upgrade as necessary
- 10) Explore the cost effectiveness of a cost sharing program to improve current access
- 11) Look for ways to create and sustain a capital budget
- 12) Continue the ban on ATV and snowmobile usage on Town roads until a viable alternative is developed
- 13) Work with farmers and business owners to identify road improvements to reduce travel distances
- 14) Don’t discourage new roads; rather, make sure any new roads are built not only up to State class standards but local standards as well.

Utilities and Facilities

As noted, Holland is a small Town with limited resources and facilities which relies heavily on adjacent communities for the provision of some key services. The Town also relies in no small part on grants to provide various services, maintenance, and capital improvements. The Town should consider budgeting funds to allow retention of a part time grant writer to ensure that appropriate grant opportunities are not lost and relieve existing personnel of the burden of this responsibility. If not financially feasible, the Town should encourage citizens with the appropriate skills in a field to assist in grant applications. The Land Use map identifies the location of any utilities and facilities in Town. The following discusses the key components of this section which directly affect the Town.

Community Facilities: The only local facilities consist of the Town offices, a small two room structure with a vault on approximately one acre of land; the Elementary School adjacent to the Town Offices on 6+ acres of land; and the Town garage, with an associated recycling center consisting of a number of large shipping containers. The Town garage is in extremely poor condition. It is also undersized and ill equipped for current needs such as length of new trucks, inside storage of materials and machinery, and vehicle maintenance. It needs to be significantly renovated or replaced. As part of the capital budget process, a financing plan for this improvement should be developed. At this time, there is no need to increase the number of local facilities, such as providing for municipal sewage or water; however, there are some in Town who believe a community center would be desirable. As long as the School is available for community functions, Town resources would be better spent on other aspects identified in this plan. Concerning the School, refer to the Education section. At this time, there is sufficient vault space for the foreseeable future and no apparent need for expansion of the building. Services regarding Town roads were discussed in the Transportation section.

Electricity: See Energy section.

Solid Waste: The Town is a member of the Northeast Kingdom Waste Management District and works cooperatively with it to manage wastes in accordance with the District's solid waste implementation plan. As noted, there is a local recycling center, open weekly, located at the Town garage. Residents can also take advantage of other District programs, such as household waste events at the Derby Town garage. There is a current need to add an additional container to the recycling facility.

Fire and Ambulance Services: These are currently provided by the companies in Derby Line and have proved adequate. No changes are needed; however, the Town needs to continue to support both these entities through financial and volunteer assistance.

Law Enforcement: These services are provided by the State Police. The presence of the Border Patrol may be somewhat of a deterrent to crime and agents can act as first responders when necessary, but they do not act as law enforcement officers. Should the Town determine the need

for law enforcement, the Orleans County Sheriff's Department would be the department of choice.

Libraries: The Town relies on the Haskell (Derby Line) and Dailey Memorial (Derby Center) libraries, for these services. No changes are needed, but the Town needs to continue support for these services as Holland has a good representation of people at both libraries.

Telecommunications: Holland is not served by cable, except on the portion of State Route 111 that crosses the southwesterly corner of Town. According to a report prepared in November 2015 by the Vermont Department of Public Service, only four locations in Holland were served by broadband internet at that time. Concerning communication towers, some seasonal residents desire greater coverage than the intermittent service currently available. At the same time, some residents believe part of the rural charm of the Town comes from the unavailability of this service. In regards to communication tower construction, see the Land Use section.

Recreation: The only specific recreation facilities in Town are the playground and fields at the Elementary School, the State fishing access at Holland Pond, and the VAST snowmobile system. It is expected that school officials will address any issues or limited needs associated with the playground and fields in their budgeting process. In general, no specific improvements in the field of recreation are needed, and 48% of 2015 questionnaire respondents felt the Town should provide recreational opportunities.

Cemeteries: There are two Town and six private cemeteries. The Town has the responsibility of maintaining the two Town cemeteries. Lots of work needs to be done to restore headstones of families that are no longer able to maintain them. The town should support the efforts of the Cemetery Commission with their efforts to honor the history of our forefathers. There is currently a shortage of burial space available at these two locations given the slopes and ledge present. The Town needs to explore options to increase space for burials.

Water Lines and Hydrants: The International Water Company, which provides water to Derby Line, Beebe, and Stanstead-Rock Island Canada, utilizes Holland Pond as its reserve water supply. A water line runs from the Pond to Derby Line. The Town of Holland has two pressurized fire hydrants on this line which require maintenance. The Town should ensure that appropriate agreements are in place to maintain these hydrants and allow additional hydrants if more become desirable.

Objectives:

- 1) Provide Town services in a cost effective manner
- 2) Monitor changes in demand or regulations concerning Town services to respond in a proactive fashion
- 3) Support private or governmental initiatives in the continued provision of existing services
- 4) Support potential upgrades or newly installed private or governmental services.

Implementation:

- 1) Encourage volunteer assistance in the preparation of grant applications
- 2) Continue financial support for area libraries
- 3) Institute the implementation recommendations concerning the Elementary School contained in the Education section
- 4) Continue membership in the Solid Waste District and monitor and obtain another container for the recycling center
- 5) Explore options to increase available burial space in the Town cemeteries
- 6) Renovate or replace the Town garage.

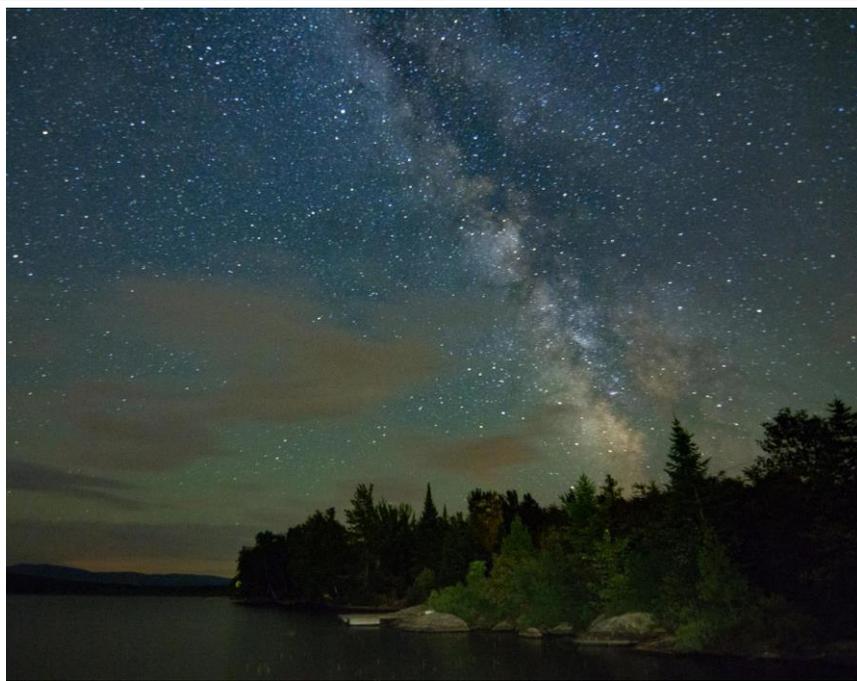
Natural Areas and Historic Features

Historical

There is one identified historical structure in Town, the Holland Historical Society (old congregational church). This building is on the National Register of Historic Places. The Society, which relies principally on volunteerism, has published an excellent History of Holland. The latest town questionnaire (2016) continued the tradition of support for preserving historic structures in town. It should be noted that in the last three surveys (2005, 2012, 2016), preserving historic structures had 65% or more of the population's support. While other areas of Town have obvious historical relevance such as the Methodist Church (the last remaining structure from the old Town center), there are no structures or areas that warrant extraordinary measures of protection.

Natural Areas

There are numerous natural areas and scenic features throughout the Town, including the Bill Sladyk Wildlife Management Area containing 4,655 acres along the eastern end of Town, managed by the Vermont Fish and Wildlife Department. The WMA is currently without a Management Plan and will be receiving one in the coming years, at that time the State will be reaching out to the Town. The State wants the Town involved with their Land Management Plan, to ensure the local voice is heard when and if the state decides to undertake any potential changes to the WMA, though at this time there are no plans for any significant changes to the WMA. The



Holland Pond

Photo by Rick Desrochers, Northern Dreams Photography

WMA has the only designated locations containing rare, threatened, or endangered species and thus provides excellent protection of these locales. Holland Pond, located essentially in the WMA consists of 344 acres, is the Town's largest body of water. It has summer camp development on the western shore side only.

While there are two State access points (fishing access on Holland Pond, and the northern gate), there is no Town property along the pond. Therefore all

the wealth of recreational opportunities available in the public WMA are only accessible through a Private Right of Way road. There are numerous wetlands, streams and undeveloped areas throughout Town, with the highest spot being Mount John in the eastern portion of Holland (See Natural Resource Constraints Map in appendix to the Plan).

Town Landscape

Holland has many scenic views, many easily accessible by road. Notable important views in Holland can be found on sections near and around the tops of Mead Hill Road, Bates Hill Road, Trucott Road, and Page Hill Road. There are also scenic stretches of the Valley Road, Stearns Brook Road, Holland Pond Road, Gore and Lyon Roads. A major feature of all these viewsheds is of rolling hills of undeveloped countryside comprised of pasture, forest, and occasional corn field and dotted with homes, while more in the distance are mountains in the east (Vermont's Green Mountains), west (Gore, Middle Mountain ridge, and Bluff), south (Bald Mountain and those in Westmore) and north (Mont Pinnacle, Orford, Owl's Head). This being said much of Holland's charm comes from its very rural and generally undeveloped nature. As a result most areas of Town are not seriously impacted by such modern occurrences as noise, light (save the Border Crossing on I-91) and air pollution or significant degradation of natural resources through large development. However, it is noted that agricultural use of land, if not worked in accordance with good management practices, can negatively impact water quality due to sediment and nutrient enrichment of waterways. As the Town and surrounding areas grow, this rural, generally unspoiled character, will deteriorate without a concerted effort on the parts of both governmental agencies and townspeople.

Watershed

The Town of Holland is within Vermont Tactical Basin 17, and the majority of the town is in the Tomifobia subwatershed and drains north to Lake Massawippi in Quebec. Everblue Massawippi is a non-profit Massawippi Watershed Protection Association whose mission is to preserve the health of Lake Massawippi. As such, it prioritizes the improvement of water quality throughout the watershed. Everblue has stated that the Tomifobia watershed is the primary contributor to sediment and nutrient enrichment to Lake Massawippi. The Association would like to work with the Town to improve the water quality in the Tomifobia Watershed.

The southern portion of Holland is mostly within the Clyde River subwatershed which drains to Lake Memphremagog, with the southeastern corner in the Coaticook River subwatershed.

Surface waters in Holland include eight ponds that are large enough to be regulated by the State Agency of Natural Resources under the Shoreland Protection Act, which establishes a protected area consisting of the first 250 feet from the mean water level of lakes and ponds greater than 10 acres in size. These ponds are Beaver Pond, Holland Pond, Line Pond, two Mud Ponds, Round Pond, Stearns Pond, and Turtle Pond. Holland Pond is by far the largest of these, at 329 acres. The other ponds range in size from 13 acres to 39 acres. It is noted that six of these ponds are located within the Bill Sladyk Wildlife Management Area.

Named streams in Holland include Stearns Brook, Orcutt Brook, and Holland Brook.

Although this basin is known for its clear waters, deep lakes and exceptional fisheries, there are some impaired waters. The 2015 Lake Memphremagog Watershed Water Quality and Aquatic Life Assessment Update identifies Turtle Pond and Duck Pond in Holland as “impaired” due to atmospheric deposition of acid. In addition, portions of Stearns Brook are listed as impaired due to sediment and nutrient enrichment associated with agricultural runoff. The State is working with the landowner in this case to mitigate sources of pollution.

The Tactical Basin Plan for Basin 17 is currently in the process of being updated. A major focus in the update will be the development of a phosphorus Total Maximum Daily Load (TMDL) for Lake Memphremagog and an associated phosphorus reduction plan to restore this impaired water. Lake Memphremagog is shared with the province of Quebec. A majority of the lake is in Quebec while the majority of the lake’s watershed is in Vermont. A lake model is currently being developed for both the Quebec and Vermont watershed areas to understand how much phosphorus must be reduced from agricultural lands, developed lands, roads, as well as forest to allow the lake to meet its water quality standard.

Small farms (10 acres or more used for farming (as defined in Act 64)) are now required to utilize new (2016) Required Agricultural Practices that address the need to improve Water Quality. The town will support all farms to follow these Practices as they protect the natural heritage and biodiversity of Holland.

Invasive Species

Invasive species are species that have been introduced to an area outside their native range and have no natural competitors or predators. Invasive species can be aquatic or terrestrial plants or animals and can be introduced through a variety of means.

Invasive plants can cause damage to the natural ecosystem by out-competing native plants.

Invasive plant species often do not offer the same characteristics as the native plants they replace. This can lead to increased erosion, clogging of streams and waterways and providing less nutritious food and habitat for wildlife. Holland is home to a number of invasive plant species, some having a very noticeable impact. Terrestrial invasive plants such as Phragmites, Japanese knotweed and Purple loosestrife are abundant along the Holland Roads and in wetlands. While these have not officially been mapped by the Tactical Basin Map, they have been observed by local residents.

Invasive insects pose a serious threat to forests as well. The Hemlock Woolly Adelgid attacks hemlock trees and has been found in the State of Vermont already. The Emerald Ash Borer has yet to be found in Vermont, but the insect is quickly spreading and decimating ash trees from the Great Lakes region to Quebec. The Asian Longhorn Beetle is another invasive insect that attacks hardwood trees and an infestation has been found covering over 18 square miles in Massachusetts. There are other invasive insects that could pose a threat to the current natural heritage if an outbreak were to occur.

In order to protect the natural heritage of the town, invasive species should be watched closely. Many communities throughout Vermont are wrestling with approaches for the control of invasive

species. The Nature Conservancy provides an excellent web page with a list of invasive plants in Vermont as well as tips for identifying and controlling them, which can be found at: <http://www.nature.org/wherewework/northamerica/states/vermont/> Once established, many species are difficult to control and the impacts they have on the ecosystem pose devastating consequences for the town's natural resources.

Objectives

- Support and Protect Holland's history as a rural undeveloped town with an active working landscape
- Support and protect local agriculture utilizing state recognized best practices and healthy working forests in Holland and surrounding area
- Protect Holland's rural undeveloped landscape, natural heritage and biodiversity for the benefit of current and future generations.

Implementation

- Encourage agricultural use of land despite land values rising.
- Encourage farmers to talk to Farm Bureau and explore options for keeping their land in agriculture.
- Encourage the diversification of agriculture in the region so as to promote the viability of farming for the future.
- Promote citizens scientists to collect and utilize maps of surface waters, wetlands and key watersheds and riparian habitats that should be protected or conserved to support habitat for fish, aquatic plants, aquatic invertebrates and other organisms important to our natural heritage. Also to identify areas in town where Invasive Species have altered the landscape
- Encourage conservation of natural resources through local conservation planning and land stewardship.
- Collect and utilize maps and other data on land use patterns to understand current agricultural areas, contiguous forestland and residential/commercial development.
- Encourage and provide education on Best Management Practices as defined by the USDA Natural Resources Conservation Services and the Vermont Agency of Natural Resources.
- Encourage small farms to implement Required Agricultural Practices to improve water quality
- Develop a relationship with Everblue Massawippi to improve water quality of our section of the Tomifobia watershed.
- Maintain Holland's pastoral landscape.

Education

The Town is part of the Orleans-Essex North Supervisory Union. Educational services are provided either through this body or home schooling. The Town has an Elementary School, with junior and senior high students being educated at the Derby Junior High and North Country High (located in Newport) respectively. The Elementary School facility, located on School Road as shown on the Land Use Map, consists of limited administrative space, classrooms, and a gym/meeting hall and is located on 6+ acres of land. The School is used for community functions, including Town Meeting and large public hearings, and is also available for private usage when not conflicting with educational needs. Based on State assessment scores, the Elementary School is known in the district for its high quality education.

Based upon a statewide analysis, the School is one of the most cost effective schools in Vermont. The Holland School District's education spending per pupil as of 2016 ranked 231st out of 267 school districts in Vermont. The number of children attending the elementary school has slowly diminished over the past few years, with currently 42 children currently enrolled which is actually a higher number than the previous year. The Holland School District education spending is currently approximately \$13,358 per pupil, this is part of what sets the town tax rate. Actual budget expenditures are \$22,744 per pupil. This reflects cost for special needs students and students that need individual development programs. The larger cost is offset by federal and special education dollars. Sending Holland children to Derby Elementary is always a discussion. Current tuition would cost the HSD \$10,765 per pupil. What the tuition doesn't show is the added cost of transportation and the HSD's loss of the special education and federal money the HSD would have to come up with to cover any special needs students sent to Derby. Holland would also lose their small schools grant (revenue for the school) by closing the school. This would add in itself about \$2,000 per pupil spending on its own. The 2015 questionnaire reveals some significant changes in support for the school from the 2005 survey. 76% of respondents favored continuance of the school in 2005 (7% not in favor, 17% undecided). In the 2015 survey 41% would encourage continuance of the school (33% not in favor, 25% undecided). At the same time, 48% of respondents in '05 felt school taxes were too high as compared with 71% in 2015, versus 21% believing Town taxes were too high in 2005 and 38% felt this way in 2015. 73% were in favor of developing a plan to use the school for another purpose if school consolidation is mandated.

The Town faces three key issues concerning education:

- 1) The continued rise in the overall cost of educating children both at the Elementary School and beyond.
- 2) The desire to continue providing a quality elementary education in a cost effective fashion without significant capital costs.
- 3) The passing of Act 46 by the state legislature suggesting consolidation of smaller school districts with neighboring larger ones.

Concerning the first issue, the Town feels there is little it can directly do to influence overall educational costs given the significant State control of the funding process and influence of the

Teachers' union. Concerning the Elementary School, Holland is in the conundrum which many small town schools face: too few students and costs become excessive requiring such potentially drastic measures as closing the facility, too many students and significant capital expenditures will be required to accommodate them. The number of children in Town is clearly a factor over which the Town has little control. To the end of continuing to provide a quality cost effective elementary education, school officials need to ensure as minimal budget increases as possible, provide timely and preventative maintenance on the school, continually monitor the potential student population to react to significant changes in a proactive manner, monitor the school situation in adjacent communities to assess joint cost saving mechanisms, look at opportunities to "gain" additional students within the constraints of available school space, and proactively deal with issues arising from potential mandated consolidation.

At current, the Holland School Board is in process of scheduling/providing an informational meeting on Act 46 to the Town of Holland. This should provide information on pros and cons of consolidation and or closing of the school along with other potential impacts on our school.

Objectives:

- 1) Provide a high quality education in a cost effective manner
- 2) Attempt to minimize increases where possible in educational costs both in the Elementary School and District
- 3) Continue to operate the Elementary School until such operation becomes financially infeasible or consolidation is suggested and/or adopted

Implementation:

- 1) Continue to utilize the Elementary School as a community facility
- 2) Urge local school district members and State legislators to look at level funding for a period of time
- 3) Maintain the proactive stance of the local School Board in addressing issues prior to their becoming problems
- 4) Explore opportunities to work with adjacent communities to provide cost effective services for both Towns.
- 5) Urge local administrative bodies to communicate with State and Federal legislators the need to carefully review and determine the applicability of unfunded mandates in order to reduce unnecessary educational costs.
- 6) Explore options or uses for the school in the event of closure as an educational institution.

Energy

Context and Rationale

The Energy section of the 2012 Holland Town Plan included reference to a formal policy developed by the Town concerning commercial energy generation (see appendix) to allow viable input to regulators. In that Plan, it was noted that the Town strongly supports utilization of renewable energy but believes commercial facilities should be constructed in scale with their surroundings with limited negative environmental and health impacts and should provide a direct benefit to the Town in the form of both tax base and direct energy availability.

This new Energy Plan for the town of Holland has been developed very shortly after the passing of Act 174, and the release on November 2, 2016 of a new and more comprehensive set of “voluntary” standards addressing town Energy Plans. It is the understanding of the Holland Planning Commission that in order for the Vermont Public Service Board to give the Holland Town Plan “substantial deference,” the said Plan must follow these “Energy Planning Standards for Municipal Plans.” This Energy Plan is an attempt made by amateur volunteer citizens to satisfy these standards developed by legal professionals; this disparity in experience, compensation and standing therefore should be understood moving forward.

As per the Standards created by the Vermont Department of Public Service (DPS), a municipality may submit its adopted Town Plan to the Regional Planning Commission, which in Holland’s case is the Northeastern Vermont Development Association (NVDA), for a “determination of energy compliance.” However, NVDA has to have itself received an affirmative determination of energy compliance from the DPS in order to bestow this determination on member Town’s Plans. The update of the NVDA’s regional plan is expected to be completed in mid to late 2017, after which it will seek compliance with the DPS. The Town of Holland may submit its adopted Town Plan directly to the DPS for this determination up until July 1, 2018. After that date, determination of compliance is only obtained through the NVDA.

Until an official determination of “energy compliance” is made, the Public Service Board is directed under current State statute to give this Holland Town Plan “due consideration” when reviewing an application for a Certificate of Public Good, provided it contains the required elements for municipal plans as contained in 24 V.S.A. Section 4382.

Regional Targets

Targets have been developed by the State for each region in Vermont for the provision of renewable energy generation. Although all technologies for renewable energy need to be considered in regional energy planning, it is noted that NVDA has already exceeded its target for the provision of wind energy, since a number of industrial scale wind turbines have already been developed in the region.

Resources, Needs, Scarcities, Costs and Problems

Holland has abundant forest resources and wood therefore makes up a sizeable percentage of the fuel used to heat homes in town (see section below on thermal energy). Based on 2015 Grand List data, 5,732 acres of land in Holland were enrolled in the State’s “current use” program as forest land, in addition to the acreage enrolled as agricultural land.

Electric power is supplied to homes and businesses (i.e., farms) by Vermont Electric Cooperative (VEC). Some homes utilize residential-scale solar power.

For those residents who drive gasoline-powered cars, the closest gas station in the U.S. is in the village of Derby Line, about 6 miles to the west of Holland’s western boundary. According to Drive Electric Vermont, at driveelectricvt.com, the closest public vehicle charging station is also in Derby Line, at the Derby Line Unitarian Universalist Church.

Although the Town has not conducted local research to determine how many residents drive cars using renewable energy sources (biofuel, propane, electric) this information is registered with the VT Department of Motor Vehicles.

The Vermont Department of Public Service Fuel Price Report for August 2016 is depicted on the chart below.

Cost and Efficiency of Fuel Sources						
Type of Energy	BTU/unit	Typ Effic	\$/unit	\$/MMBtu	High Efficiency	\$/MMBtu
Fuel Oil, gallon	138,200	80%	\$2.23	\$20.14	95%	\$16.96
Kerosene, gallon	136,600	80%	\$2.80	\$25.65		
Propane, gallon	91,600	80%	\$2.54	\$34.64	95%	\$29.17
Natural gas, ccf	100,00	80%	\$1.41	\$17.67	95%	\$14.88

Electricity, kWh (resistive heat)	3,412	100%	\$0.15	\$43.46		
Electricity, kWh (cold climate heat pump)	3,412		\$0.15		240%	\$18.32
Wood, cord (green)	22,000,000	60%	\$227	\$17.21		
Pellets, ton	16,400,000	80%	\$275	\$20.96		
Source: November 2016 Vermont Fuel Price Report, Department of Public Service MMBtu: million British thermal units						

As shown in the chart above, cord wood is currently the lowest cost fuel per thermal unit of all profiled fuels available in Holland (natural gas is not available).

The retail cost of electric energy per kilowatt hour from VEC is .08728 for the first 100 kWh and .17620 for each additional kWh beyond the first 100.

“Net metering” allows members to connect small-scale renewable energy systems to the grid and receive credit on their electric bills. The most common type of net metering is solar, but wind, hydro and methane can also be used under the net metering program. For net metering projects, utilities in Vermont are required under current rules to pay either \$.20 or \$.19 per kilowatt-hour (which increases with every rate increase), depending on the size of the project. These rates are above the retail rate, and the wholesale rate paid by the utility for other power sources, including renewable ones. New net metering rules are being developed for 2017 that are intended to create a sustainable program that supports increased distributed generation at a cost-effective rate.

Currently, there are no known pressing needs locally in regards to energy resources.

Conservation

The Town strongly supports all Holland citizens increasing their energy efficiency and conservation through a variety of means. Citizens are urged to connect with energy organizations in the State such as Efficiency Vermont and the Northeast Employment and Training Organization (NETO) in order to do our part towards supporting the State’s 2016 Comprehensive Energy Plan (CEP). Residents are encouraged to adopt best energy practices when constructing new homes or additions to homes. These practices include designing for passive solar heating, adequate insulation, and use of Energy Star appliances.

Patterns of Development

Patterns of development conducive to energy conservation include the clustering of homes to require shorter networks of streets and utilities. Shorter streets and electrical lines require less energy to build and maintain, and require less vehicle miles traveled. In addition, with shorter electrical lines there is less line loss. This alone can result in a significant savings of money and energy.

Energy Usage

The Town has consulted the Vermont Energy Dashboard (vtenergydashboard.org) to gather information on energy usage in Holland. The Planning Commission intends to “ground-truth” this data with local research. However, until such time that this local research and analysis is completed, this Plan relies on the data provided on the VT Energy Dashboard as well as the U.S. Census Bureau.

The VT Energy Dashboard, created by the Energy Action Network (EAN), sets the baseline energy usage at the year 2014. It projects total energy usage through 2050, using a methodology based on assumptions about energy efficiency improvements, conversion to renewable energy, and population. The explanation of methodology for this data states: “The Dashboard provides directionally correct projections based on best available information. To estimate the 90% by 2050 projections, it draws on energy scenario work contained in Vermont's 2016 Comprehensive Energy Plan, modeling by VEIC using the Long-Range Energy Assessment Planning (LEAP) tool, and EAN's 2050 Energy Pathways analysis.”

It is noted that while the Dashboard’s information on electricity usage has a high level of accuracy, information on thermal (heat) and transportation energy usage is not as accurate, with estimates based on the State’s mix of heating fuels and assumptions of energy usage in different settings (e.g., large city vs. rural community).

The Dashboard provides the following estimates for baseline and projected energy usage in Holland in the sectors of Thermal, Electricity and Transportation. The common unit of energy measurement across these sectors is MMBTU, or 1 million British Thermal Units. Estimates are provided on the Dashboard for every year from 2014 to 2050, but only the benchmark measurements provided for 2025, 2035 and 2050 are shown in the table below.

Total Estimated Current and Projected Energy Use in Holland					% decrease needed to meet 2050 consumption targets
Sector	2014 (Baseline)	2025	2035	2050	

Thermal (Heat)	65,881 MMBTUs	55,899	46,824	33,213	40.6%
Electric	13,692 MMBTUs	16,502	19,057	22,889	NA
Transportation	50,063 MMBTUs	41,757	34,207	22,881	54.3%
TOTAL	129,636 MMBTUs	114,158	100,088	78,982	39%
Source: vtenergydashboard.org					

As shown on the table above, overall energy usage in Holland is targeted to decrease by 39% from 2014 to 2050, due to improvements in efficiency, use of renewables, and population change.

Thermal

In the case of thermal energy, the VT Energy Dashboard’s assumptions for exiting use of renewable sources are not accurate -- it estimates that approximately 24% of energy used for heating is renewable. Based on local knowledge, and supported by the Census Bureau’s American Community Survey, approximately 48% of homes in Holland are heated with wood. This renewable energy resource is locally-sourced from the Town’s forest lands (see Land Use section of this Plan for a discussion of the importance of the Town’s forest resources for recreational and economic purposes.)

The U.S. Census Bureau’s 2010-2014 American Community Survey 5-Year Estimates provides the following breakdown of home heating fuel in Holland:

Home Heating in Holland			
	Occupied housing units	Owner-occupied housing units	Renter-occupied housing units
	Estimate	Estimate	Estimate
Number of units	284	263	21
House Heating Fuel			
Utility gas	0.0%	0.0%	0.0%
Bottled, tank, or LP gas	3.9%	4.2%	0.0%
Electricity	0.0%	0.0%	0.0%
Fuel oil, kerosene, etc.	47.2%	46.8%	52.4%
Coal or coke	1.4%	1.5%	0.0%
All other fuels	47.5%	47.5%	47.6%
No fuel used	0.0%	0.0%	0.0%

Wood products would fall in the “all other fuels” category, estimated to be the heating fuel for 47.5% of Holland’s occupied housing units.

The Northeastern Vermont Development Association (NVDA) is developing an alternative methodology for estimating energy consumption for all towns in the region. Using this methodology developed for residential heating consumption, which is based on recent American Community Survey data and other sources, residential heating consumption in Holland is estimated to be 32,797 MMBTUs. (See supplementary tables in the appendix). Since non-residential uses in Holland are limited, it is likely that the 65,881 MMBTUs estimated by the Vermont Energy Dashboard is on the high side.

Electric

The Vermont Electric Cooperative (VEC) provides electrical service to Holland. There are currently no commercial-scale electrical generating facilities in Holland. Some residential properties utilize solar power, although only one of these systems is included on the VT Energy Dashboard: a roof-mounted photovoltaic (PV) system. This system generates 2,523 kWh of electricity annually. It is noted that electrical usage data on the Dashboard only reflects renewable energy devices connected to the grid and net metered; it does not reflect homes that use renewable energy facilities and are off the grid.

Of the total 13,692 MMBTUs of electricity used in 2014 in Holland, 3,181 MMBTUs, or 23.23%, were from renewable sources. The proportion of electrical energy that comes from renewable sources is expected to increase through 2050, as VEC purchases more of its electricity from renewable sources, and as more residential-scale renewable sources, such as ground-mounted and roof-mounted PV systems are net-metered to the grid.

As previously noted, data on electricity usage is expected to have a high level of accuracy, since it comes directly from the utility.

Transportation

The town of Holland is a slave to conventional fossil fuels when it comes to transportation. With no provisional retail establishments in town all citizens are required to drive miles to neighboring towns in order to purchase goods and services. Further, for the majority of those citizens in town who are employed, a commute of driving many miles is required. Although recreational biking occurs on the many scenic roads in Holland, the use of biking as a means of commuting to work by a majority of the workforce in town is not realistic.

There is also the agricultural portion of Holland which uses many different types of equipment all requiring sometimes high level of fossil fuel use. Without any hard data it is easy to assume that the town emits a larger percentage of carbon from transportation and related uses than a similar

sized population in a more dense area. Based on a methodology being developed by NVDA that uses census and other sources of data, it can be estimated that vehicles in Holland use 308,000 gallons of gasoline per year, with an estimated expenditure of \$693,000 per year. (See also U.S. Census Bureau data on job counts and commuter patterns in the appendix.)

However given the large amount of conserved forest land in town (4,655 conserved acres in the Bill Sladyk WMA, plus 5,732 acres enrolled as forest in the Current Use program) one could also assume that our stands of maple, pine, hemlock, cedar, birch well make up for our carbon footprint caused by transportation.

Goals and Implementation

The Town of Holland supports the State of Vermont's Renewable Energy goals set forth in Act 174, such as the 25 x 25 goal. That being said the town of Holland consists of less than 0.1% of the total population of the state, and therefore will contribute to these goals comparatively. The Town of Holland will diligently work to support policies and projects that will result in at least 25% of local energy use across all sectors being produced by renewable energy resources by 2025. As almost 50% of the Town's thermal energy was produced by renewable sources in the benchmark year of 2014, the Town is well on its way towards this goal.

As noted in many other sections of the Town Plan, Holland is a fiscally strapped community with limited resources. One primary resource outlined in other sections of this Plan is the undeveloped rural pastoral agricultural landscape that dominates Holland. Any potential commercial renewable energy facilities must not cause adverse impacts to agricultural or forestry resources, must not impact any of the important viewsheds outlined in the Natural and Historic Areas section of the Town Plan, and must significantly contribute to the financial well-being of the Town. Further, the town of Holland is home to the majority of the 9,400-acre Bill Sladyk Wildlife Management Area, which also covers a portion of the Town of Norton. This vital natural area and its migratory bird flight paths (including the state endangered Common Loon) must be protected for the benefit and use by future generations of Vermonters.

Any potential commercial energy production facility located in town must both fiscally benefit the Town and co-exist within our undeveloped pastoral agricultural landscape.

Thermal Energy Goals and Implementation

While almost 50% of Holland households currently utilize the renewable fuel source of wood, the percentage of thermal energy sourced from renewable sources can increase to 90% by 2050. It is expected that in addition to heating with wood products, home-owners will also begin to utilize

heat pumps. Heat pumps draw heat from the environment and bring it inside, or move it outdoors for cooling. Air-source heat pumps gather heat from the ambient air, while ground-source or geothermal heat pumps extract it from the ground. Heat pumps are highly efficient, so it is expected that even with the construction of new homes in Holland, there will be a net decrease in energy used for heating through 2050.

1. The Town will help facilitate increased use of heat pumps and wood/wood pellet furnaces in Holland residences through educational events for residents, to which manufacturers of renewable energy heating systems will be invited.
2. The Town will sponsor weatherization workshops and encourage energy efficiency among full and part time residents, as well as provide information on methods to reduce pollution from wood heat.
3. The Town will support viable forestry practices to ensure the continued use of wood energy in home heating in an environmentally sound fashion.
4. The Town will provide information on where residents can view the residential and commercial building energy standards developed by the State of Vermont. These standards can currently be found on the website of the Vermont Department of Public Service.

Electrical Energy Goals and Implementation

The Town of Holland supports its electrical provider, VEC, in its efforts to increase the amount of renewable energy in its portfolio, working towards 90% renewable energy by 2050. The following additional measures and standards are intended to implement the Town's energy conservation and renewable energy goals while avoiding negative impacts that can be associated with new generation facilities:

1. Energy audits of municipal buildings should be supported by the budgeting of sufficient funds over time to allow for installation of energy saving fixtures and appliances as these require replacement.
2. The Town of Holland intends to investigate the creation of a Community-owned methane digester that could provide renewable electrical generation to VEC, while making use of on-farm resources. Such a facility can most appropriately co-exist with the Town's pastoral landscape, while helping to eliminate greenhouse gases. The Town could pursue a 50% or more shareholder stake in such a project, and the development of a facility could

be dependent on the support of 65% or more of the Town's voting population in a binding referendum.

3. The Town supports the utilization of alternative energy sources for residential development. The location of small wind electric systems (i.e., residential scale), and solar panels on rooftops, is appropriate. Existing developed and impervious areas associated with the Holland Town School and the municipal building property may lend themselves to development of renewable energy facilities.
4. The location of renewable energy facilities larger than 15 kW should first be located where existing electrical transmission capacity exists, rather than in locations necessitating upgrades and the disturbance associated with new construction of transmission lines and poles.
5. Renewable energy facilities should not be sited in locations that negatively impact scenic views.
6. Cultivated farmland and forested areas, including that enrolled in Current Use (see map), is inappropriate for the siting of large-scale renewable energy facilities occupying more than 2 acres of land, given the value of this land for producing biofuels and for sustaining the local economy.

It is understood that the heightened Standards under Act 174 requires towns to identify potential areas for the development and siting of renewable energy resources, and to identify regionally and locally-identified resources that present constraints to such development.

Given the extreme time constraints the Town is working under, the Town respectfully wishes to refrain from identifying specific areas appropriate for siting of renewable energy facilities, beyond the general guidelines noted above, until a series of meetings can be held to allow the citizens of Holland a voice in what they want in their community. The Town intends to have an amendment to this area of the Town Plan that will include the mapping of locally-identified resources (such as scenic views) and the identification of potential suitable areas, and this amended Plan will be filed with the Public Service Board by January 2018. With this goal in mind, the town plans on supporting no potential commercial-scale renewable energy facility until such time the citizens are able to lend their voice on what is appropriate for the town of Holland.

Transportation Energy Goals and Implementation

The town of Holland is a slave to conventional fossil fuels when it comes to transportation. With no provisional retail establishments in town all citizens are required to drive miles to neighboring towns in order to purchase goods and services. Further, for the majority of those citizens in town who are employed, a commute of driving many miles is required. There is also the agricultural portion of Holland which uses many different types of equipment all requiring sometimes high level of fossil fuel use. Without any hard data it is easy to assume that the town emits a larger percentage of carbon from transportation and related uses than a similar sized population in a more dense area. However given the large amount of conserved forest land in town (4,655 conserved acres in the Bill Sladyk WMA, plus 5,732 acres enrolled as forest in the Current Use program) one could also assume that our stands of maple, pine, hemlock, cedar, birch well make up for our carbon footprint caused by transportation.

As noted in the Land Use section of the Plan, Holland is rich in agricultural resources. As shown on the soils map accompanying this Plan, Holland has 7,488 acres of agricultural soils, consisting of both nationally-rated “Prime Agricultural Soil” and “Statewide Important Soils” (see also the Land Use section of this Plan regarding the importance of agriculture to the local economy.)

The Vermont Bioenergy Initiative, a program of the Vermont Sustainable Jobs Fund, aims to foster the sustainable bioenergy through a “local production for local use” model. The program allows Vermont farms to ease their resilience on foreign fossil fuels by focusing on biodiesel production and distribution for heating and transportation, oil crops for on-farm biodiesel and feed, grass energy for heating, and algae production for biofuels and waste management.

It is important for the town to consider a potential future where transportation fueled by fossil fuels may not be as economically feasible as it has been from the 1980’s to present. Due to the importance of agricultural resources for developing locally-sourced biofuels, agricultural parcels enrolled in Current Use should not be considered for the installation of commercial-scale solar or wind electrical generating facilities that will prevent cultivation of land for these uses.

The Town will work to promote energy conservation related to transportation and work for a shift to alternative fuels by the following action steps:

1. Promote economic development in town, focusing on agricultural and forestry-based businesses and small provisional retail, allowing for shorter commutes to work and shopping for staple provisions.
2. Promote the production of biofuels as an agricultural business.

3. Encourage local farms to address their energy needs through alternatives available to the agricultural community
4. Promote ride-sharing services, and identify potential sites for a carpooling parking lot.
5. Reduce or limit transportation energy usage through such aspects as timely maintenance of vehicles, analysis of routing for snowplowing, and potential for higher mileage vehicles.

Analysis and Local Targets

As it has been noted in other areas of the Town Plan, Holland is a fiscally strapped town and cannot take on any additional costs at this time, however does support and intends to comply with Act 174. With the no concrete outline for how to access financial assistance or legal guidance from the State in regards to conducting Analytical Studies in order to fully comply to the Standards of Act 174, the Town of Holland expects that this required Analysis will not be complete until 2020 at which point the town will have established feasible targets relating to all required areas with concrete benchmarks for the years 2025, 2035, and 2050.

Mapping

The Regional Planning Commission, NVDA, has provided Holland with maps containing State-generated layers depicting natural resource constraints, including high priority habitat blocks. It has also provided the Town with a layer depicting solar and wind potential in the Town, which also depict the location of existing electrical transmission lines (this State-developed layer was released in the summer of 2016 but additional revisions are expected.) Also depicted on this map is a potential location for hydro-electric generation. These maps are included in the Appendix to this Plan. However, as noted above in the goals on electrical energy, these maps do not depict locally identified constraints, such as important scenic views. These views are described in the section of the Plan on Natural and Historic resources.

Housing

For all intents and purposes the only housing stock in Holland consists of single family homes (there are seven structures listed as containing two units, which are considered single family residences for purposes of this review). There are no multifamily and single family residences dwellings. Based upon Lister's records from July 2016 there are 394 single family residences in town consisting of 261 year round dwellings (of which over 80% are owner-occupied) and 133 seasonal homes. These include both stick built and mobile homes. Current Town population is estimated to be 689. There are currently 8 unlanded mobile homes and 16 landed mobile homes.

Trends in Population and Housing in Holland and Orleans County 2000-2014					
Town of Holland	2000 Census	2010 Census	2014 ACS	Change 2000- 2014 (number)	% change 2000-2014
Total Population	588	629	689	101	17.2%
Total Housing Units	354	433	445	91	25.71%
Occupied Housing Units (households)	219	257	284	65	29.7%
Renter-occupied units	36	31	21	-15	-41.7%
Housing Units for seasonal, recreational or occasional use	128	158	N.A.	30*	23.4%
Orleans County					
Total Population	26,277	27,231	27,160	883	3.4%
Total Housing Units	14,673	16,162	16,359	1686	11.5%
Occupied Housing Units (households)	10,446	11,320	11,214	768	7.4%
Renter-occupied units	2,708	2,767	2,578	-130	-4.8%
Housing Units for seasonal, recreational or occasional use	3,397	3,951	NA	54*	1.6%
Source: U.S. Census Bureau Decennial Census, 2000 and 2010; American Community Survey Demographic and Housing Estimates, 2010-2014 *2014 data not available					

As shown above, population and housing unit growth in Holland outpaced the rest of Orleans County by several percentage points. However, renter-occupied units in Holland has decreased by almost 42% from 2000 to 2014. In 2014, renter-occupied units accounted for only 7.4% of all occupied housing units (this does not include seasonally-occupied units).

As of 2010, seasonal housing units accounted for 36.5% of all housing units in Holland, an increase of about 23% since 2000.

Income, Housing Costs and Ability to Afford			
	Holland	Orleans County	Vermont
Median Family Income, 2009 -2013	\$50,156	\$52,235	\$68,111
Per Capita Income, 2009-2013	\$22,509	\$22,303	\$29,167
Median Household Income, 2009-2013	\$43,173	\$41,953	\$54,267
...homeowner households	\$49,000	\$47,026	\$64,771
...renter households	\$27,083	\$23,216	\$30,943
Median value of owner-occupied housing units, 2009-2013	\$135,600	\$156,300	\$216,800
Median monthly owner costs, 2009-2013	\$885	\$881	\$1,208
...with mortgage	\$1,119	\$1,210	\$1,546
...without mortgage	\$468	\$525	\$631
...as percentage of household income	21.4%	23.1%	22.9%
Number of owner-occupied housing units, 2009-2013	269	8,546	182,537
...with owner costs at or above 30% of household income	36.8%	34.3%	32%
...with owner costs at or above 50% of household income	19.3%	13.5%	12%
Specified housing units with gross rents	11	2,229	69,581
...at or above 30% of household income	45.5%	54.9%	52.5%
Median gross rent (all units), 2009-2013	\$821	\$692	\$875
...as a percentage of household income	24.4%	32.7%	31.1%
Source: Vermont Housing Finance Agency, www.housingdata.org			

In reviewing housing data, it is apparent that both income and housing costs in Holland are reasonably consistent with Orleans County averages (although somewhat below) and below that of the State as a whole. Vermont Housing Data statistics indicate that homeowners, on average are paying approximately 21.4% of their income for housing, and renters are paying about 24.4% (due to the low number of rental households, this sample data has a low degree of reliability). However, 36.8% of homeowners and 45.5% of renters have housing costs that exceed 30% of their income. Households with housing costs exceeding 30% of income are considered financially stressed. Holland is about on par with the County and State in terms of housing affordability. There are, however, a number of issues of concern regarding housing. They are:

1. The lack of multifamily dwellings in Town which typically provide younger families and single persons reasonably affordable housing.

2. The lack of any housing facility available for older residents of the Town who may not be able to continue to maintain a single family home.

While the Town feels that much of the erosion in affordability of housing is beyond the scope of the Town, actions to assist in retaining and increasing affordable housing stock are noted below,

Objectives:

Provide what assistance the Town is able to maintain and increase affordable housing.

Implementation

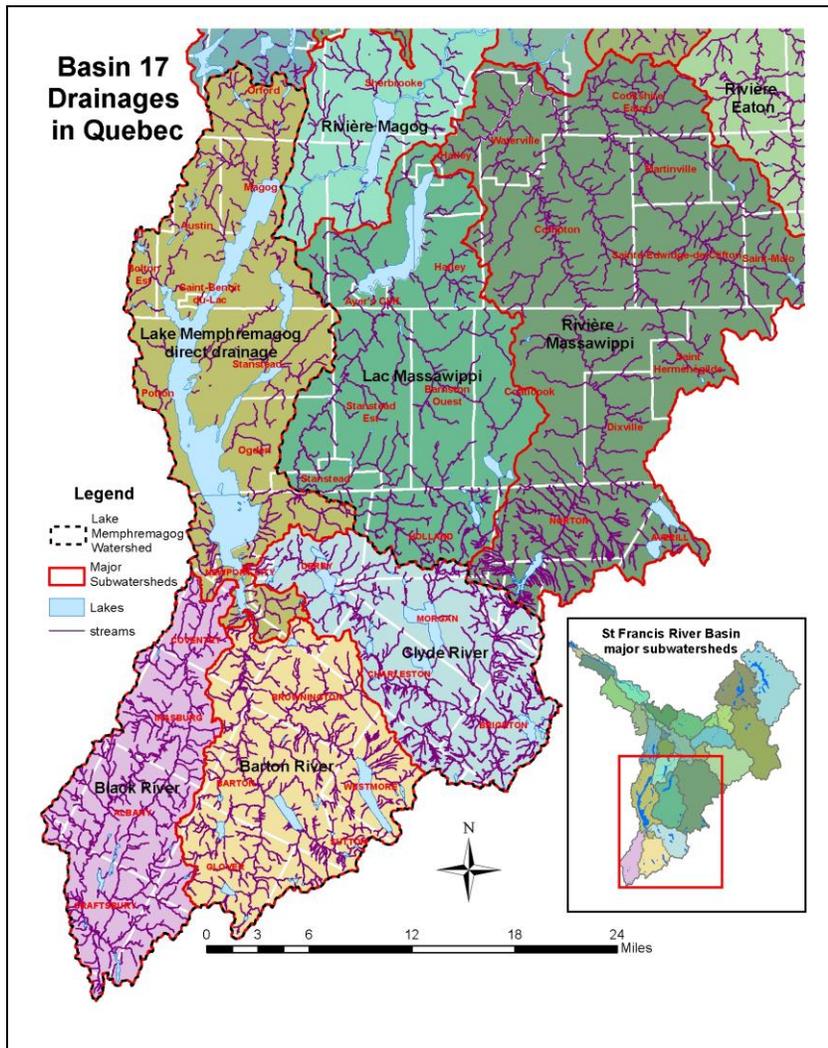
1. Encourage cluster type housing on smaller lots with joint infrastructure which utilize existing Town road for access
2. Explore mechanisms to provide maintenance and rehabilitation funding for existing residences to help maintain affordability.
3. Encourage residents and homeowners to explore loan and grant programs for housing renovation available to low and moderate income households through USDA and Rural Edge.

Flood Resilience

Introduction

State statute directs that a municipal plan shall include a flood resilience plan that:

- Identifies flood hazard and fluvial erosion hazard areas based on State river corridor maps, 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 improved property;
- Recommends polices and strategies to protect the areas in flood and fluvial erosion hazard areas and to mitigate risks to public safety, critical infrastructure, historic structures, and municipal investments.



Existing Conditions

The Town of Holland is within Vermont Tactical Basin 17, and the majority of the town is in the Tomifobia subwatershed and drains north to Lake Massawippi in Quebec. The southern portion of the town is mostly within the Clyde River subwatershed, with the southeastern corner in the Coaticook River subwatershed.

Although this basin is known for its clear waters, deep lakes and exceptional fisheries, there are portions of Stearns Brook that are listed as impaired due to sediment and nutrient enrichment associated with agricultural runoff.

Surface waters in Holland include eight ponds that are large enough to be regulated

by the State Agency of Natural Resources under the Shoreland Protection Act, which establishes a protected area consisting of the first 250 feet from the mean water level of lakes and ponds greater than 10 acres in size. These ponds are Beaver Pond, Holland Pond, Line Pond, two Mud Ponds, Round Pond, Stearns Pond, and Turtle Pond. Holland Pond is by far the largest of these, at 329 acres. The other ponds range in size from 13 acres to 39 acres. It is noted that six of these ponds are located within the Bill Sladyk Wildlife Management Area.

Named streams in Holland include Stearns Brook, Orcutt Brook, and Holland Brook.

Mapped Hazard Areas

The Federal Emergency Management Agency has not mapped Holland for flood prone areas, and consequently there is no Flood Insurance Rate Map for the town. However, Holland is eligible for FEMA funds even though it is not in the National Flood Insurance Program.

The State of Vermont Agency of Natural Resources (ANR) has mapped “River Corridors” throughout the State. The River Corridors, as defined by ANR, “encompass the area of land surrounding a river that provides for the meandering, floodplain, and the riparian functions necessary to restore and maintain the naturally stable or least erosive form of a river thereby minimizing erosion hazards over time.” Since lands within and immediately abutting a river corridor are at higher risk to fluvial erosion, the State recommends that development within mapped River Corridors be avoided, and that a 50 foot setback be maintained from smaller streams.

As an incentive to encourage Towns to restrict new development within River Corridors, the State provides an increased State match under ERAF for Towns that adopt local flood regulations incorporating regulation of State River Corridors.

River Corridors have been mapped by the State for portions of Stearns Brook, Orcutt Brook and Holland Brook in Holland (see map).

Infrastructure and Buildings at Risk

The Town of Holland in developing a Local Hazard Mitigation Plan (LHMP). Once approved by FEMA, the Town Selectboard will adopt the LHMP. The LHMP identifies the road infrastructure that have experienced damage in the past due to flooding, erosion, and stormwater runoff, and identifies proposed mitigation measures.

ERAF

The Emergency Relief Assistance Fund (ERAF) helps Vermont municipalities repair damaged infrastructure after a presidentially-declared disaster. ERAF funding typically covers half the required 25% non-federal match for approved projects.

As of October 23, 2014 Towns needed to have four flood hazard mitigation measures in place in order to maintain level state funding in the event of such a disaster:

- 1) Adopt Flood Hazard Regulations that meet minimum standards for enrollment in the National Flood Insurance Program;
- 2) Adopt the most recent Agency of Transportation Road and Bridge Standards;
- 3) Adopt a Local Emergency Operations Plan (LEOP); and
- 4) Update and adopt a Local Hazard Mitigation Plan and submit to FEMA for approval.

The Town of Holland has adopted a LEOP, the State Road and Bridge Standards, and is in the process of developing a hazard mitigation plan. Because the town does not have any FEMA-mapped flood hazard areas, a different basis for establishing hazard areas would need to be established in order for the Town to adopt flood hazard regulations and join the NFIP. If the State River Corridors were used in conjunction with other information, this would further increase the amount of funding provided by the State under ERAF.

Planning Considerations

Local Hazard Mitigation Plan

Once the LHMP has received approval by FEMA and has been adopted by the Town Selectboard, the proposed mitigation measures related to flood hazards contained in that plan should be incorporated in this Town Plan by reference.

Vegetated buffer areas and coverage limitations

Maintaining natural vegetation and limiting impervious surfaces in areas close to streams helps prevent potential sedimentation of streams and water bodies and reduce stormwater runoff that could contribute to downstream flooding. In addition to the recommended avoidance of areas within the statewide river corridors, it is recommended that a setback of 50 to 100 feet be maintained from of smaller streams.

Upland forests and wetland areas

The management of upland forested areas plays an important role in flood hazard management. As these areas are cleared and become developed, storm water, instead of infiltrating naturally into the soil, quickly runs off hard surfaces picking up pollution and carrying it to waterways. Increased flows during storms can destabilize stream channels and adversely affect water quality. Limiting the extent of disturbance and development of impervious surfaces on upland slopes helps to reduce the amount of storm water runoff, and helps to avoid overwhelming existing stormwater infrastructure, including roadside ditches and culverts. Avoiding steep slopes greater than 20% when clearing and developing land, and managing stormwater runoff from new development on-site will also help mitigate future flood hazards.

Wetlands provide an important floodwater storage function, storing stormwater runoff and flood waters that overflow riverbanks. As flood waters recede, the water is released slowly from the wetland soils. By holding back some of the flood waters and slowing the rate that water reenters the stream channel, wetlands can reduce the severity of downstream flooding and erosion.

The State of Vermont regulates activities in and adjacent to wetlands in accordance with the Vermont Wetland Rules. State permits are necessary for activities in or within 100 feet of Class I wetlands, and within 50 feet of Class II wetlands. A permit can only be issued if it is determined that the use will have no undue adverse impact on protected functions, unless such impacts are mitigated. The State also regulates stormwater runoff for development projects involving over one acre of earth disturbance, and creating one acre of impervious surface. However, the stormwater from many developments of less than one acre can cumulatively cause flooding and pollution. Since Holland does not have local land use regulations, non-regulatory means can be pursued. Areas adjacent to streams subject to fluvial erosion, steep slopes, upland forests and wetland areas can be protected through securing conservation easements in critical locations, and educating property owners of best practices. It is noted that the Bill Sladyk Wildlife Management Area affords protection to Holland Pond and its tributaries, as well as a number of smaller ponds in the WMA. In addition, substantial acreage in town is enrolled in the current use program.

Tactical Basin Plan

The Basin 17 Water Quality Management Plan is a plan prepared by the Watershed Management Division of the Agency of Natural Resources. It can be viewed online here: <http://www.vtwaterquality.org>.

The Basin Plan contains the following proposed objectives that are relevant to flood resiliency and water quality planning in Holland:

- Increase awareness of stormwater runoff issues and available solutions through newspaper articles and outreach materials.
- Complete demonstration projects addressing stormwater issues in the basin, such as rain barrels or rain gardens, to show how these practices can be used and increase awareness of these methods.
- Increase educational opportunities and outreach to the general public, landowners, and loggers on good forestry practices and the mechanics of logging.
- Increase awareness of landscaping techniques to minimize nutrient, herbicide and other pollutant runoff from lawns. Techniques include: aerating, increasing organic content, maximizing natural vegetative cover, and using less and only phosphorus free fertilizers except where soil testing show low soil phosphorus levels.
- Conduct extensive outreach of existing programs that provide financial incentives for cover crop, conservation cropping, no-till etc. to all farms

Objectives

1. Mitigate flood hazards and maintain good water quality in town:

Implementation

1. Undertake restoration projects in river corridors.
2. Encourage best practices to handle stormwater runoff from existing and new development.
3. Discourage development on steep slopes and within river corridors.
4. Create a capital improvement plan to address the mitigation projects identified in the LHMP, beginning with the highest priority projects.
5. Consider adopting Flood Hazard regulations to regulate development within the River Corridor Areas mapped by DEC in order to mitigate flood and fluvial erosion hazard risks, protect investments in streambank restoration projects, and receive a higher amount of funding under ERAF
6. Hold periodic education events to inform local residents how to mitigate flood and fluvial erosion hazards.

Relationship to Adjacent Communities

The Planning Commission read the currently adopted or recently proposed plans for each adjacent Vermont Town as well as the Northeast Kingdom Regional Plan. Concerning adjacent communities:

Norton and the Unified Towns and Cores (UTG): As noted, Holland has no direct roadway connections with these communities and, with the exception of a small parcel adjacent to Canada, the entire portion of the Town abutting these communities consists of the State owned Bill Sladyk Wildlife Management Area. Given these situations and the fact that both Towns are similarly rural to Holland, the Town sees no conflicts between our plans.

Morgan: Holland shares a lengthy border with Morgan to the south with its three roadway connections all consisting of collector roads. In addition, for much of the Town, the closest retail (albeit limited) businesses, as well as a Post Office, are located in Morgan. The Town shares two principal concerns with Morgan, roadway maintenance and uncertain futures for each community's elementary school. As the current and proposed land uses and general elements of the Morgan plan are consistent with those provided in this document, no significant conflicts are apparent. Holland should take certain actions concerning its relationship with Morgan as noted in the objectives and implementation recommendations below.

Derby: The Town of Derby has the greatest existing and potential impact on Holland given its population, provision of numerous commercial and employment opportunities, expansion of the I-91 border crossing, and roadway connections. In great part, Holland acts as a bedroom community to Derby and it is expected that this function will continue to grow. As the Derby land use plan provides for essentially rural residential development adjacent to Holland, which is consistent with that proposed in this plan, no direct conflicts are apparent between the two plans. The Town does need to take certain actions to ensure compatibility and limit potential negative impacts from Derby's expected growth as noted below.

Regional Plan: Given Holland's remote location and anticipated limited growth role in the region, the provisions of this plan are consistent with the regional plan. Holland's goals for growth in agricultural businesses as a means of economic development is consistent with State and regional goals.

Canada: There is virtually no direct interaction between the Town and communities to the north given the lack of any roadway connections. As a result, the Town knows virtually nothing about proposed plans and potential impacts from Canada and historically has taken no action to do so. While current land uses are generally compatible (and proposed to stay so in Holland), a dialogue with these communities is appropriate to ensure continued compatibility.

Objectives:

1. Interrelate with adjacent communities in a proactive fashion to understand changes and

issues in those communities, provide them with timely notice and opportunity for discussion of significant changes in Holland, and provide input if significant changes or development are proposed in those communities which affect the Town.

Implementation:

1. Continue to financially support, provide input to, and monitor actions of the NVDA.
2. Initiate a dialogue with abutting communities in Canada to understand their planning processes and potential future impacts on Holland and to provide input as appropriate.
3. Develop a relationship with Everblue Massawippi to improve water quality of our section of the Tomifobia watershed.
4. Work with adjacent communities to ensure coordinated roadway maintenance, provide input to their planning processes, and address educational issues of mutual concern to assess possible cost savings.
5. Monitor and provide input to the Town of Derby as it continues to address growth in that community. Of particular concern are viable and coordinated maintenance of the two collector roadway connections, and major growth proposals in Derby. A key step is to inform Derby officials of Holland's interest and request timely notification of major development or other changes proposed close to Holland.