

# Town of Hardwick

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## Town Plan 2014

**Adopted on September 18, 2014**

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## HISTORICAL PREFACE

### Hardwick's History

The Town of Hardwick had its beginning in the part of town known as Hardwick Street. The land was granted to Danforth Keyes and his associates in 1780 and chartered in 1781. Settlements were attempted but it was not until 1792 that Mark Norris and his wife arrived from New Hampshire to become the first permanent settlers. In 1793 and 1794 the settlement grew to a sizeable community.

The building of the Bayley-Hazen Road facilitated growth of this area. General Bayley began this road in 1776 for the purposes of conveying troops and provisions into Canada. The project was abandoned but begun again in 1779.

The first town meeting was held at the home of Mark Norris in 1794. The Town was organized in 1795. In that year, fifteen votes were cast for the Governor of the state.

In 1798 Samuel Stevens came to the area. He chose for his location what is now East Hardwick and built what is now known as "the Brick House". He named this village Stevensville. By 1885 Stevensville was a thriving community, boasting two general stores, two churches, a carriage factory, a saw mill, a grist mill and several dwellings. In 1846, the first post office was established at the village, by then called North Hardwick.

The first settlement in South Hardwick or Lamoille, now Hardwick village, was made by Captain John Bridgman in 1795. The town grew rapidly from 1790 to 1860. The St. Johnsbury and Lamoille County Railroads were officially opened in 1877. Hardwick was dependent on agriculture and its location as a trade center until the opening of the quarries nearby.

Henry Mack pioneered the granite industry in 1868. With the completion of the railroad Hardwick came prominently into the field as a shipping point. The Village of Hardwick was chartered in 1890. In 1897 the Hardwick and Woodbury railroad was completed, connecting the quarries with the town.

The granite industry reached its peak in 1911. The decline was slow. Operations continued through the 1920s and until 1934 on a small scale. The tracks of the Hardwick to Woodbury railroad were taken up for scrap metal during World War II.

Recent history has seen the Village of Hardwick merge with the town in July 1988 creating a single municipal governance system again. In 1992 a fire destroyed two buildings and damaged a third altering Hardwick's Historic Main Street. The buildings were reconstructed and the downtown area continued as the economic and historic center of Hardwick. In 2006, Main Street suffered another setback as the Bemis block burned, gutting the structure. Since then, the historic block has been reconstructed by the Lamoille Housing Partnership. The property contains 14 apartments for senior citizens and individuals with disabilities, as well as three commercial spaces at the street level, currently housing a gift shop, book store and restaurant, all locally owned.

## INTRODUCTION

Hardwick has been many things over the years- agricultural settlement, trading center, mill site, granite capital, down on its luck community, and rebuilding center. Hardwick today is described in many ways including as the "Gateway to the Northeast Kingdom". The Town of Hardwick is a combination of the people and the land they work. ~~The Hardwick Area Chamber of Commerce may have described it best when they called this area "The Heart of Vermont". They went on to say:~~

~~More than our geographic location, the "Heart of Vermont" expresses who we are. In our area, you'll find "real Vermonters" - people that work hard, play hard, care for their neighbors and respect each other and the land. As we worked to identify who we really are, it quickly became apparent that we represent Vermont in a very real sense. This is your grandfather's Vermont. If you visited Vermont as a child - this is the Vermont that you will remember. You won't find fancy ski hills, extravagant~~

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~~shopping malls, or people that try to impress each other with their material possessions. What you will find are people that live and work in an area that is known for its rugged beauty. We do have beautiful lakes, wonderful hills, cross-country ski trails, golf courses, hiking and biking trails, and unusual shops and attractions that are well worth the search to find. In the Heart of Vermont, you can unplug, relax and connect to your family, friends and the natural beauty that surrounds you.~~

~~The Town of Hardwick Town Plan has been a valuable document to the community for many years. This 2014 revision of the Hardwick Town Plan will expand on the earlier plans to address more topics, provide additional insight to existing subjects, add more maps, and revise the goals, policies, and recommendations to better chart our course for the future.~~

Hardwick continues to face many opportunities and challenges. Over the past five to ten years, Hardwick has accomplished much and had to endure many setbacks. The industrial park is filling up with high quality businesses; unemployment has dropped and incomes are rising; our education systems have improved. At the same time the village had to recover from yet another fire on Main Street.

This town plan is a place where Hardwick can take stock in where they are and set a course for the future. For Hardwick, this is our opportunity to reflect on our present challenges and opportunities and chart our course for the next five, ten, or twenty years. The success or failure of this, or any other planning effort, rests with the community. ~~A bold plan needs inspired persons to support it.~~

~~This plan is not intended to be a plan for only some of the community or of a certain special interest, but instead a plan that reflects the aspirations and values of all of Hardwick residents. The Planning Commission has made every effort during the development of this plan to reflect the values and ideals of the entire town. Of course, it would be foolhardy to imply that this plan is a consensus opinion of the town's residents - it is impossible to draft a plan of this magnitude without disagreement by some. However, the Hardwick Planning Commission has listened to and considered all of the comments and viewpoints posed during the drafting of the plan. What follows is a reflection of our common history, the present status of our town's facilities and services, an expression of the views of the residents of Hardwick, and the direction proposed for the Town of Hardwick over the next five years and into the future.~~

### ~~How is a town plan useful to the residents and property owners of Hardwick?~~

~~Towns are not required to adopt municipal plans so the question is sometimes asked - why spend the time and effort to write a town plan? There is a range of ways in which a town plan can be used - from simply a source of information to a foundation for regulations. Ultimately, the residents of Hardwick will determine the uses of the Hardwick Town Plan. Among the potential uses of the municipal plan are the following:~~

~~1. A source of information: The plan is a valuable source of information for local boards, commissions, citizens and businesses. The information in a plan could serve to familiarize residents, potential residents, and development interests about Hardwick and its resources.~~

~~2. A basis for community programs and decision-making: The plan is a guide for the recommendations contained in a capital budget and program, for any proposed community development program, and for the direction and content of local initiatives such as farmland protection, recreation planning and housing.~~

~~3. A source for planning studies: Few plans can address every issue in sufficient detail. Town plans not only record and discuss what is known about the resources~~

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~~and residents of the town but also what is not known. Therefore, many plans will recommend further studies to develop courses of action on specific needs.~~

~~4. A standard for review at the state and regional levels: Act 250 and other state regulatory processes identify the municipal plan as a standard for review of applications. Municipal plans are important to the development of regional plans and regional and inter-municipal programs. In addition, state proposals must comply with town plans including the purchase of state land for parks and recreation.~~

~~5. A long-term guide: The plan is a long-term guide by which to measure and evaluate public and private proposals that affect the physical, social, and economic environment of the community.~~

~~6. To fulfill an eligibility requirement for state and federal grants: In 2000, the state began requiring towns to adopt plans in order to be eligible for most grants and low interest loans. Planning grants, water and wastewater grants, community development grants, historic preservation grants, and other key sources of funding all now require the municipality to have an adopted plan. While many private funding sources do not require town plans in order to be eligible, having a town plan that documents the need for funding will generally strengthen the application.~~

~~7. A basis for regulatory action: The plan can serve as a foundation and guide for the creation of land use regulations such as zoning regulations, subdivision regulations, official map, shoreland bylaws, and flood hazard bylaws and for the decisions made under these regulations. It can also help guide other ordinances that may be considered by the town including septic, health, junk, speed limits, and road standards ordinances.~~

### What is required in a town plan?

Vermont municipalities are authorized to create municipal development plans under 24 V.S.A. §4381. The state statutes require that certain topics be discussed although it does not mandate any specific goals and policies. All local plans in Vermont, regardless of whether they are for rural or urban municipalities, must include the following eleven components, as outlined in 24 V.S.A. §4382:

1. A statement of objectives, policies, and programs of the municipality to guide the future growth and development of land, public services and facilities, and to protect the environment;
2. A land use plan and map;
3. A transportation plan and map;
4. A utility and public facility plan and map;
5. A statement of the municipality's policies for the preservation of rare and irreplaceable natural areas, and scenic and historic resources;
6. An education facilities plan and map;
7. A recommended program for implementing the plan's objectives;



8. A statement of how the plan relates to adjacent municipalities' plans and the regional plan;
9. An energy plan, including policies and programs to implement those policies; and
10. A housing element, including a recommended program for addressing low and moderate-income persons' needs as identified in the regional plan.
11. An economic development element that describes present economic conditions and the location, type, and scale of desired economic development, and identifies policies, projects, and programs necessary to foster economic growth.

These represent the minimum requirements of Act 200 (the Vermont Planning and Development Act). Each town plan will be different depending on the unique qualities that exist in every community.

### ~~How the town plan was developed~~

~~The Hardwick Planning Commission, whose members were appointed by the Select Board, developed this town plan. A substantial update to the Hardwick Town Plan was adopted in 2008, with assistance from a Municipal Planning Grant from the Department of Housing and Community Affairs (DHCA) and with contracted assistance from with Michael Miller Municipal Planning Services, Inc, based in East Hardwick. In 2011, the Hardwick Planning Commission received another Municipal Planning Grant to assess some of its existing land use regulatory practices and to conduct a site suitability analysis to site additional commercial and light industrial uses that were deemed to be compatible with the town's character and economy. The findings from that study have been incorporated into the updated plan.~~

~~After a draft plan update was developed by the Planning Commission, the Select Board appointed a thirteen-member ad hoc Advisory Committee. This committee met on six consecutive Tuesday evenings in accordance with Vermont's Open Meeting Law. In accordance with state statute, the Planning Commission and the Select Board held warned public hearings to get additional public comment. The involvement of town residents in the planning process cannot be overstated. While it was the responsibility of the Planning Commission to develop the plan, it was the citizens, committees, and other local groups who played the critical role of gathering information and formulating plan policies. Without the participation of residents, the balancing of needs, values, and resources would have been difficult to achieve.~~

~~Planning is a continuous process and plans must be amended to meet new challenges or situations. Town plans are only valid for five years and then must be readopted. This provides an opportunity to review policies and goals and, if necessary, to amend the document.~~

### The structure of the plan

The Hardwick Town Plan is divided into five main sections:

Section 1 - Hardwick - The People and the Place is where the community profile, historic and scenic resources, and the natural resources of the area are discussed.

Section 2 - Living and Working in the Heart of Vermont will review housing and economic development plans.

Section 3 - Servicing the Residents, Visitors and Businesses of Hardwick is a broad review of the many public and private services available in the area. This includes such topics as education, transportation, health services, telecommunications, and utilities such as water, sewer and electric.

Section 4 - Hardwick's Plans for Tomorrow is where a new land use plan and strategy for achieving our goals will be laid out.

Appendix - Hardwick's Tools and Options for Plan Implementation - A good plan presents and explores the full range of options available to its citizens. This section explains all the options for plan

implementation and provides insight into how the specific strategies for achieving Hardwick's goals were developed.

~~The chapters that appear in each of the section will address both the required elements of Act 200 (discussed above) and other key areas of concern. Each of the ten required elements is addressed including information on past trends, current status, and future needs. Based on the analysis of that information, one or more goals are established for each chapter. Goals can be defined as the "desired future condition"—although some may not be attainable for many years. Policies describe conditions or standards by which anyone can evaluate a project to ensure compliance with a goal. Policies may also be local positions on specific issues.~~

~~Finally, each chapter concludes with a discussion of the recommendations for implementation of the goals and/or policies. Some may involve continuing current actions while others suggest new efforts for the future. A good implementation plan will describe what is required, by whom, and in what time frame. By following these guidelines the course of action that the plan is recommending should be clear.~~

## Section 1: Hardwick - The People and the Place

### A. COMMUNITY PROFILE

Often referred to as the “Gateway to the Northeast Kingdom,” Hardwick is a rural community located on the Lamoille River. Its geographic location at the crossroads of Route 14, 15, and 16 make it a natural trade center for the surrounding communities. Its roots are based in agriculture and industrial trades. The granite industry began in Hardwick in 1868, and reached its peak in 1911. Ongoing local agricultural and lumbering trades have continued to be a strong source of support for the rural municipality. Hardwick persevered through a slump in both economic and community development in the late 1970s through the 1980s. The creative economy began to take hold in the early 1990s. The 21<sup>st</sup> century is marked by a renewed interest and investment in the agricultural economy. The mutable economy reflects the resilience and self-sufficient character of Hardwick’s citizens, as well as their willingness to help less fortunate community members. Hardwick citizens have a deep pride and strong sense of belonging toward the town.

Hardwick strives to maintain an affordable rural lifestyle in tandem with continued economic development and sustainable growth conducive to small-scale local agriculture. Traditional agriculture and dairy farming has diversified to include value-added products. Hardwick today offers an active downtown with a variety of restaurants and shopping. Widespread Internet connectivity allows for home-based businesses and telecommuting. Outdoor recreation continues to be a vital four-season draw. The Hardwick Trails promote hiking and cross country skiing. VAST trails wind their way through the woods and fields. Hardwick waterways support fishing, swimming, and watercraft sports.

~~Population information is some of the most basic and important data needed in order to plan for a community. Historical growth trends, the age structure, and future predictions are just a few pieces of information which can help decision makers in guiding the future of Hardwick.~~

#### Historical Census counts

Since 1791 the U.S. Census Bureau has conducted an actual count of persons living in each town in the country every ten years. The historical data in Figure 1 shows some trends over the past two hundred years.

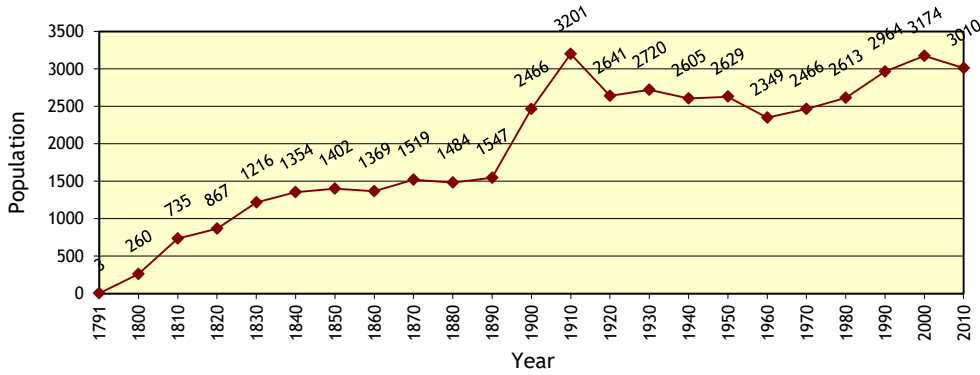
Between 1791 and 1840 there was steady growth before the population leveled out for the next half century. Accordingly, the end of the 19<sup>th</sup> Century saw the introduction of the granite industry and a huge spike in population. This period continued until approximately 1910 when the population dropped sharply and then slowly declined until 1960. From 1960 to 2000, Hardwick’s population slowly increased, nearly reaching that of its 1910 peak of 3,200 residents. According to the 2010 Census, that trend has now ended: Hardwick’s population is now 3010, representing a loss of 164 residents.

Source: US Census

#### ~~Components of population change~~

~~Population change is the result of two sets of factors—natural increase and net migration. The population change shown in Table 1 is the difference between Census counts over the past four decades. From 1970 to 2000, the population had increased—from a low of only 147 more people in town in 1980 compared to 1970 to a high of 351 persons when the 1990 and 1980 Census are compared. In 2010, Hardwick experienced its first drop in five decades.~~

Figure 1. Population of Hardwick 1791-2010



Source: US Census

Table 1. Changes in population between Census counts from 1970-2010

Period	Change in population	Percent change
1970-1980	+147	6.0%
1980-1990	+351	13.4%
1990-2000	+210	7.1%
2000-2010	-164	-5.2%

Source: US Census (1970-2010)

Populations increase ‘naturally’ when more people are born over a certain time period than die. The Vermont Department of Health has kept birth and death statistics for each town since 1857. Table 2 shows the net of recorded births minus deaths in the town of Hardwick in each of the past four decades. Growth from natural causes has varied from between 4.9% to 8.6%. Therefore, even if no one had moved to Hardwick over the past 40 years the population would still have grown by an estimated 693 persons.

Table 2. Population change due to natural increase

Period	Increase	% population change due to natural increase
1970-1980	211	8.6%
1980-1990	180	6.9%
1990-2000	149	4.9%
2000-2010*	151	4.8%

Source: Center for Rural Studies–Town Profiles; VT Department of Health Vital Statistics (1970-2010)

Net migration is the second factor affecting population change. Quite simply, net migration is the difference between the number of persons moving into town and moving out of town. This information is determined by subtracting the natural increase from the total change in population. For example, it is known from Census data that there was an increase of 351 persons in Hardwick between 1980 and 1990 (see Table 1). It was determined that, of the 351 persons, 180 were the result of natural

~~increase (see Table 2) therefore the other 171 were the result of net migration (see Table 3). Interestingly, there was a net loss of residents during the 1970s. Were it not for natural increase, the population in town would have dropped.~~

**Table 3. Net migration**

Period	Net migration	% population change due to net migration
1970-1980	-64	-2.6%
1980-1990	174	6.5%
1990-2000	64	2.2%
2000-2010	-317	-10.0%

~~Over the past forty years, the increase in population has been primarily from natural causes not migration. Since 1970, the population has increased by 708 persons of whom there was a natural increase of 693 persons and a net migration of -149 persons.~~

### Current population and age distribution

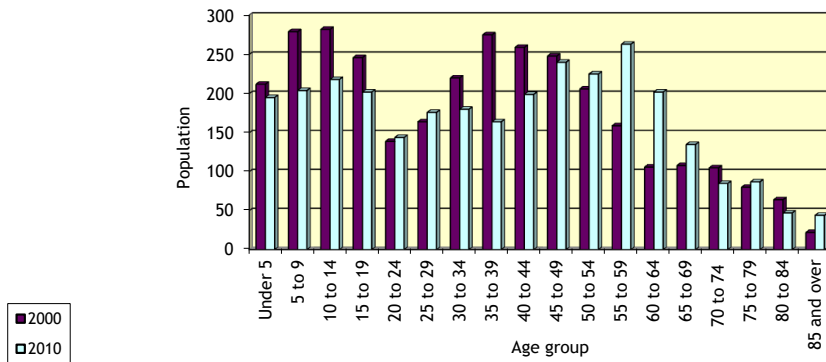
The most recent population count for Hardwick is 3,010 (U.S. Census 2010). Every year the US Census estimates each town’s population based on building permits and vital statistics (the birth and death reports discussed above). Hardwick’s 2011 population-estimate (the most recent on record) is 3,003, marking an even further drop in population.

The median age for Hardwick is 40.7 years old, which is 2 years younger than the state average and 1.2 years younger than Caledonia County as a whole.

Age and age distribution information is important in order to predict future service needs, especially for schools. Breakdowns by age categories are shown in Figure 2 alongside comparable numbers from 2000. There was one distinct peak in the '60 to 64' age group. Compared to statewide figures, Hardwick has roughly the same percentage of “boomers” (ages 45 to 64).

Compared to 2000 Hardwick has fewer infants, and far fewer school-age children (under the age of 19). Interestingly, there is a slight uptick in the groups from ages 20 to 29, which suggest that Hardwick’s young people of the previous Census may be staying close to home. There is an overall drop in groups between the ages of 30 and 50. Finally, there is an overall increase among those in groups age 50 and older, which suggests that Hardwick’s population is aging. This demographic shift has already translated into decreased enrollments at school. It also presupposes an increase in retirees that can be expected to continue for at least another decade. Retirees have different needs and require different services than working age groups. Changes should be expected for the amount and types of services needed by these groups as time goes by.

Figure 2. Population by age groups in Hardwick 1990-2010



## Diversity

Diverse communities benefit from having a variety of viewpoints, backgrounds and experiences with which to take advantage of opportunities or address problems. Communities that celebrate the similarities and differences that exist within their community enjoy a deeper understanding of their neighbors and of the world as a whole.

There are many ways to measure the diversity of a community. Ancestry, ethnic group, age groups, economic classes, place of birth, education, marital and civil union status, disability, and religious affiliation are all ways to look at diversity. Although certainly homogeneous when compared to other parts of the United States, Hardwick does have a mix of races, ethnic groups, economic classes, and religions.

Some measures of diversity include:

- Hardwick is 97.7% white which is slightly higher than the state average of 96.1%. Our largest minorities are Black/African American and American Indian (both 0.6%). Native American is the largest race (after white) identified by individuals as having 2 or more races. (US Census 2010)
- As a result of our history, certain groups were drawn to Hardwick. The ancestries most identified by Hardwick residents in the most recent American Community Survey 5-Year Estimate (2008-2012) was English (21.6%), French 20.1%), Irish (13.4%), and French Canadian (7.5%). The next largest group identified themselves as “American”(6.9%)<sup>1</sup>.
- As discussed above, age groups are an important indicator of diversity. Compared to Vermont as a whole, Hardwick has proportionately more children (under 20) and roughly the same number of boomers (45 to 64) and fewer residents in their 20s.
- Hardwick, according to the most recent American Community Survey 5-Year Estimates, is 75.5% native Vermonter; much higher than the state average of 51.2%. Another 21.7% were born in another state, 1.0% are Americans born outside of the United States, 36 individuals were naturalized citizens and 16 were not citizens.
- According to the American Community Survey, most residents of Hardwick speak only English (97.7%) and most of the remaining residents were bilingual. Only 0.3% residents were identified as speaking English less than “very well”.
- Although skewed to the lower incomes, Hardwick has a mix of incomes from the lowest groups to the highest. According to American Community Survey 5-Year Estimates, roughly 3% of Hardwick households have less than \$10,000 in annual income, and roughly 3% have more than \$200,000. The largest group (roughly 22% of households) have an annual income between \$35,000 and \$50,000. While every community wants their residents to achieve the middle class, having a town where low income residents are excluded and forced to live elsewhere is neither fair nor legal.

~~While diversity adds to the character and flavor of a community, it may also add challenges.~~

~~Some of these may include:~~

- ~~• *Language.* This is the most apparent and is many times very contentious. The inability to speak English challenges many small communities that host foreign born residents. This makes integration into the community difficult for the new residents and adds friction as bilingual teachers may need to be added to schools, increasing costs to the host town.~~
- ~~• *Cultural and religious differences.* New cultures bring traditions with them that sometimes are a challenge to integrate. As communities in Chittenden County are~~

<sup>1</sup> American Community Survey has replaced the traditional “long form” of the Census. Data from American Community Survey is updated annually and is based on a multi-year averaging of responses, so total responses will not completely align with Census data.

~~learning, something as basic as cemeteries may not be appropriate for the religious practices of new residents.~~

### Regional and neighborhood populations

Hardwick is located at the western edge of Caledonia County. While the state grew by only 2.8%, Caledonia County grew at a faster rate of 5.1%. By contrast, Hardwick and Greensboro lost population (see Table 4 - next page).

Table 4 indicates that Hardwick, Greensboro and Elmore appear to be missing the relatively rapid growth of surrounding towns. Many surrounding communities are growing at double digit rates (12% or more), which is a predominant trend among the rural communities in Vermont’s Northeast Kingdom. Among neighboring counties, growth in Lamoille County has slowed considerably over the past decade (from 17.7%, down to 5.3%). Washington and Orleans Counties have grown at modest rates of 2.7% and 3.8% respectively. However, the recently announced EB-5 funded projects scheduled for the Newport-Jay corridor are likely to lead to substantial growth in Orleans County.

The Town of Wolcott was among the fastest growing towns in the State for a few years running. The most recent Census shows a brisk decennial rate of growth at 15.1%. While the housing market has cooled, Hardwick still has some fast growing towns nearby.

Table 4. Populations and percent change since 2000 for Hardwick and neighboring towns.

<i>Town</i>	<i>2000 Population</i>	<i>2010 Population</i>	<i>% Change 2000-2010</i>
Cabot	1,213	1,433	18.1
Craftsbury	1,136	1,206	6.2
Elmore	849	855	0.7
Greensboro	770	762	-1.0
<b>Hardwick</b>	<b>3,174</b>	<b>3,010</b>	<b>-5.2</b>
Stannard	185	216	16.8
Walden	782	935	19.6
Wolcott	1,456	1,676	15.1
Woodbury	809	906	12.0
Caledonia County	29,702	31,227	5.1
State of Vermont	608,827	625,741	2.8

Source: U.S. Census 2000, 2010

### Population projections

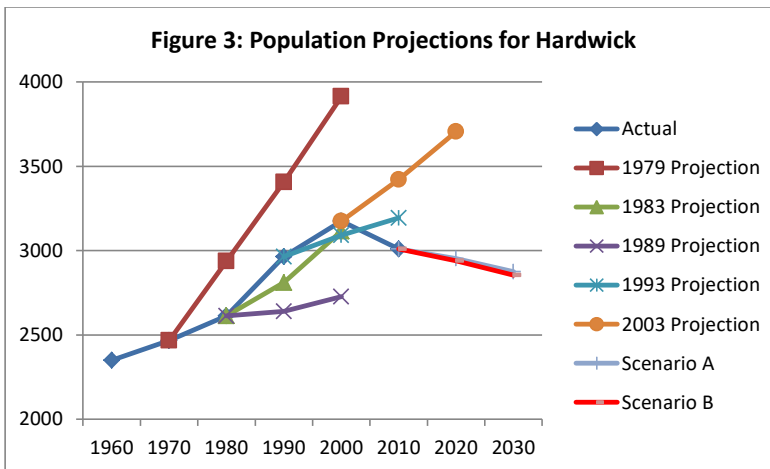
Various agencies in state government periodically make future population predictions based on complex models that factor in expected fertility and mortality rates for the town as well as projected migration into or out of the town. It should be noted that population projections are expectations of what might occur, based on an assumptions that what has occurred in the past will occur into the future. These assumptions include mortality rates (which are declining among groups aged 50 and up), birth rates, and migration rates. Since 1970 there have been five official population projections. An early study from 1979 suggested that Hardwick might grow at a very high rate and have nearly 4,000 residents by the year 2000 (see Figure 3). In reality, Hardwick’s growth was significantly slower and was much closer to projections released in 1983. Just before the 1990 Census the growth rate for Hardwick was adjusted down expecting very little growth. In 1993, after the 1990 Census release, the state increased the expected growth rate for Hardwick and made projections out to 2010. By the 2000 Census, the 1993 projection was already off by 82 persons. Another set of projections released in 2003

estimated a 7.8% growth rate for the first ten years and an 8.3% rate for the following ten years. According to this set of projections, Hardwick should have had 3,422 residents by 2010 and 3,705 by 2020.

Obviously, projections are imprecise. Population projections can give an idea of where the overall population may be heading (such as an aging population), but they are NOT to be viewed as predictions! Projections cannot take into account events that may alter the course of previous trends, such as changes in immigration policy, epidemics, social changes that lead to a change in birth rates, or economic changes that affect internal migration.

In August 2013, the State of Vermont released a new set of population projections to 2030. Unlike earlier projections, these projections use TWO scenarios. "Scenario A" assumes an in-migration rate similar to what occurred from 1990 to 2000, when the economy was more robust. "Scenario B" assumes a migration rate in line with what occurred from 2000 to 2010, a decade plagued by lingering recession and economic turmoil. In either scenario -- assuming that current conditions and trends continue -- Hardwick can expect to see a decrease in its population. But again, there is a major caveat:

~~This is not a crystal ball prediction for Hardwick. For example, this projection does not take into account any significant economic changes, such as the impacts of the EB-5 developments that are planned for the Northeast Kingdom. The Planning Commission will seek updated data whenever significant changes occur or additional information is available.~~



Sources: The People Book - Vermont Population Projections 1980-2000 (Vermont State Planning Office 1979); Vermont Population Projections 1985-2000 (Vermont Department of Health 1983); Vermont Population Projections 1990-2005 (Office of Policy Research and Coordination 1989); Vermont Population Projections 1990-2015 (Vermont Health Care Authority 1993); MISER Population Predictions for Vermont, 2000-2020 (Stefan Rayer 2003); State of Vermont, August 2013.

### Goals, Policies, and Recommendations

~~In order to follow the guiding principles of this town plan, the Planning Commission will need to monitor growth rates in order to anticipate situations that may have a negative impact on the community. State population forecasts will also offer some perspective into potential future population growth but, as mentioned earlier, the state has had some problems making accurate predictions with regards to Hardwick.~~



**GOAL**

- ~~For Hardwick's population to have a slow to moderate growth rate without placing a burden on the existing facilities and services. Growth should not exceed the Town's ability to provide services to support the population.~~
- ~~For Hardwick to be a diverse community, welcoming to various ages, ethnic groups, races, religions, family types, and social and economic classes.~~

~~As Hardwick has not experienced excessive growth over the past forty years, there hasn't been significant effort to implement growth control measures. The zoning bylaws, subdivision regulations, and ordinances in effect have had more of a role of ensuring quality developments rather than limiting or prohibiting growth. If the amount of residential growth becomes a concern Hardwick will need to consider additional regulations to ensure growth does not overwhelm existing facilities and services.~~

**POLICIES**

- ~~The Town should continue to require major subdivisions (creating 4 or more lots over a five year period) to meet additional requirements including requiring the projects not create a burden on existing services.~~
- ~~Subdivisions of 10 or more lots should be phased over a few years so as to not overburden the town's services and facilities.~~
- ~~The Development Review Board should deny applications where the proposal will exceed the town's ability to provide adequate service to the future residents.~~

~~The recommendations are for the Planning Commission to monitor future growth trends and be prepared to draft or amend regulations if needed. The Town also has the right to participate in Act 250 in order to address concerns related to the impact of growth on services.~~

**ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION**

- ~~If the number of persons moving into Hardwick begins to increase significantly, the Planning Commission should consider growth management tools, such as phasing, decreasing density requirements, and if necessary building caps or moratoriums.~~
- ~~The Planning Commission should review and amend the 'Future Population Predictions' information when figures are released by the State of Vermont, or other reliable source. This should be conducted, at minimum, every five years in association with the update of the municipal plan.~~
- ~~The Planning Commission should review all 'Act 250' applications for its impact on the growth of the town. Where the application is determined to not conform to this chapter or any goal or policy, the Planning Commission or Select Board should participate in the 'Act 250' process in order to ensure the concerns of the town are addressed.~~

## B. HISTORIC, SCENIC, AND ARCHEOLOGICAL RESOURCES

### Historic resources

#### Historic record

The Town of Hardwick has a rich history, which informs the values and traditions held by residents today. A period of about 30 years (1890-1920) of industrial production of commercial granite sets it apart from other towns in the region. The town, through support of the Hardwick Historical Society (HHS) will ensure that this history is available for residents, new and old, ~~to enjoy. Through a substantial grant from the Vt. Department of Transportation and other minor sources, the~~ HHS spearheaded a major renovation of the 19th century railroad depot ~~for passengers and agricultural freight—granite sheds had their own sidings—~~into a remarkable archives and museum for its holdings.

~~In 2012, a second phase of the depot restoration converted the center of the building—the baggage holding area—into a meeting place and learning center for the general public. A third phase, that of developing a climate-controlled storage space for maintaining the society's collections, still sits out in the future.~~

A survey of historical documents in the various repositories in Hardwick, completed in April 2001, revealed a ~~wealth rich web~~ of holdings. ~~The local newspaper, The Hardwick Gazette, founded in 1892, holds a complete morgue that dates back to 1896. The Jeudevine Memorial library, built in 1896, houses holds records and manuscripts of its development and operation since then its founding in 1896. It also holds the business records of Alden Jeudevine, in whose memory the library was built. The Town Clerk's Office has responsibility for town records from going back into the early 19th century, including the records of the school system. In addition it holds records of the town's school systems. Given that these other repositories have defined collecting areas, the~~ HHS has focused on ~~collecting in on records in~~ the areas of business and social activity as well as genealogical resources. ~~The HHS also stands alone in its collection of artifacts in addition to records.~~

~~Today the HHS is building on those collections as they come in. Its current work, however, focuses on a major effort to develop good legal, physical, and intellectual control of its holdings and then to arrange and describe them to make them available to researchers of all types. This effort will take many years and may require funding to complete.~~

~~Beginning in the summer of 2012, the HHS started offering a series of workshops for people concerned about preserving family papers. The two workshops offered in 2012 addressed the issues of what documents have historical value, and how to care for them. The topics will expand over time. The society has a long-term vision of supporting, through its collections, the publication of a comprehensive history of the Town of Hardwick.~~

~~The Town of Hardwick has recognized the Hardwick Historical Society for its efforts to collect and make available the history of Hardwick and the preservation of items and artifacts of historic significance. The Hardwick Railroad Depot, which belongs to the town, is now the permanent home for the group. Through a generally understood arrangement, the HHS takes responsibility for maintenance of the interior of The Depot, and the town maintains the exterior and grounds.~~

#### Historic Districts

Historic ~~D~~istricts are those areas ~~of town~~ which meet one or more of the ~~following following~~ ~~criteria~~ characteristics:

- Areas with distinctive design or landscape characteristics;
- Areas and structures with a ~~particular~~ relationship to the historic and cultural values of the ~~Town surrounding area~~;
- Structures whose architectural features bear a ~~significant~~ relationship to the remainder of ~~f the structures or to~~ the surrounding area.

~~Listing of a historic district in the National Register or state survey is a way to recognize areas of importance to the community, State or the Nation. Being included in these districts may provide~~

~~property owners with eligibility for certain tax benefits or consideration in projects using Federal money. Recognition does not obligate owners to restore or maintain their properties.~~

~~The re are two Hhistoric Ddistricts in the Town of Hardwick recorded on the National Register of Historic Places [see Historic, Scenic, and Archeological Resources Map] are the The Downtown Hardwick Village Historic District and the Hardwick Street Historic District. In addition, the Vermont Division of Historic Preservation recognizes the West Church Street Historic District, Granite Street Historic District, Wakefield Farm Historic District, Holton and Kimball Hills Histroic District, the East Hardwick District and the Mackville Historic District.~~

~~was added to the National Register in 1982 and included 69 structures on 350 acres. In 2004 the district boundaries were amended to include the Daniels Block. Most of the buildings are two- or three-story clapboard-sided, wood-framed structures. There are a few masonry buildings in the district; the most notable examples are the brick Merchants Bank, the redstone Richardsonian-Romanesque Jeudevine Memorial Library, and the granite Neo-Classical Revival Memorial Hall. The latter two buildings are constructed of locally quarried stone. (Information from the National Register of Historic Places Inventory - Nomination Form)~~

~~The second district is the Hardwick Street Historic District which was added to the National Register in 1979. This district is comprised of eight architecturally and historically significant residences and their subsidiary structures situated on Hardwick Street between East Hardwick and Greensboro. Primarily built during the early decades of the Nineteenth Century, the district contains important examples of Federal architecture, both high style and simple vernacular, and a Greek Revival Classic Cottage. The district also includes the Bayley-Hazen Road Monument; a large granite marker erected in 1906 by the Hazen Road Pomona Grange. (Information from the National Register of Historic Places Inventory - Nomination Form)~~

~~In addition to the two districts on the National Register, the Vermont Division of Historic Preservation recognizes another six districts in the Town of Hardwick Historic Sites and Structures Survey published in 1985 [see Historic, Scenic, and Archeological Resources Map]. Within Hardwick village is the West Church Street Historic District (56 structures), Granite Street Historic District (167 structures), Wakefield Farm Historic District (26 buildings), and the Holton and Kimball Hills Historic District (19 buildings). Outside of the village area is the East Hardwick Historic District (61 structures) and Mackville Historic District (28 structures).~~

#### Historic sites and structures

~~Listing in the National Register honors a historic place by recognizing its importance to its community, State, or Nation. Recognition does not add any additional permit requirements or limit the use of private property. Owners have no obligation to open their properties to the public to restore them, or even to maintain them. Under Federal law, owners of private properties listed on the National Register are free to maintain, manage, or dispose of their property as they choose provided there is no Federal involvement. Owners have no obligation to open their properties to the public, to restore them or even to maintain them, if they choose not to. Similarly, recognition on the state survey does not add any additional permit requirements or limit the use of private property.~~

~~Hardwick is fortunate to have had an very comprehensive inventory of the historic structures completed for the town. The *Town of Hardwick Historic Sites and Structures Survey* (1985) includes descriptions of the 434 structures identified within the historic districts discussed above as well as 145 additional structures scattered throughout the countryside. Of all these historic structures, only two have been listed on the National Register- the Cobb School and 143 Highland Avenue [see Historic, Scenic, and Archeological Resources Map].~~

~~In 1898 the former Hardwick Academy / Town House was converted to an opera house. In 2001 the Northeast Kingdom Arts Council was founded and began work to restore the Town House. Many improvements have been completed and the Town House is once again a functioning theatre.~~

~~Built in 1840, the Cobb School is a well preserved, Greek Revival style, one-roomed school house that is located in the northwest corner of Hardwick. The building is considered to be of statewide significance as it embodies distinctive characteristics associated with mid-nineteenth~~

~~century schools in Vermont. The Cobb School closed its doors after the 1945-46 school year and was sold. It is currently in private ownership and is used as a residence.~~

~~Possibly constructed in 1889, the tenement house at 143 Highland Avenue is the last of six such houses that had existing in Hardwick to house workers of granite industry. This large 2 ½ story structure was rehabilitated in 1999 for use as six affordable rental housing units. According to the nomination materials, the building retains its integrity of location, design, setting, materials, workmanship, feeling, and association.~~

~~In 1898 Hardwick residents approved, at town meeting, \$3,311 in funding to complete the conversion of the former Hardwick Academy/Town House into an opera house of the highest quality. By the early 1900's, the Town House was hosting "regular lecture series and family entertainment." 1940 brought frequent showings of silent movies in the Town Opera House. In 2001, The Northeast Kingdom Arts Council (NeKArts) was founded and began work to restore the historic Hardwick Town House. A 501(c)(3) organization, NeKArts has an all-volunteer board of directors who live in and around Hardwick and who recognize the importance of the Town House as a catalyst for continued community revitalization in Hardwick. In partnership with the Town of Hardwick, the Northeast Kingdom Arts Council shares in the stewardship of this integral part of our cultural history for future generations to treasure and enjoy.~~

~~The mission of the Northeast Kingdom Arts Council for The Hardwick Town House is to preserve the historic building while making it a dynamic center of culture for the region through educational and entertaining programming. Cemeteries. Although not always considered historic sites, cemeteries offer a personal link to past residents of Hardwick. For some families in town, these are the final resting places for parents, grandparents and great-grandparents. There is perhaps no stronger connection to our common past than in the cemeteries within Hardwick. These are discussed further in Section 3(A). Public and Private Facilities, & Services.~~

## Scenic resources

~~Scenic views and vistas provide the backdrop for towns are a part of a community's identity. They offer aesthetic pleasure to residents and visitors and are a valuable resource as they are linked to the economy of a region and personal well-being of the residents.~~

~~Hardwick is the "Gateway to the Northeast Kingdom". Its 38.6 square miles boasts a varied landscape including open and wooded land, working farms and appealing village areas. Views of rural lands from the following vantage points have special scenic importance to the community: Center Road, Bridgman Hill, Slapp Hill, Ward Hill, and Belfry Road. Central to Hardwick's scenic offerings is Buffalo Mountain, which provides a colorful backdrop to the village of Hardwick in every season. Hardwick Lake, the Lamoille River, Hardwick Lake and Mackville Pond also contribute to the beauty and recreational opportunities of Hardwick of the area. These areas should be protected by promoting concentrated settlement patterns and site sensitive development.~~

~~The natural splendors of the community attract tourists throughout the year who in turn provide a boost to the local economy. The combination of farmland and forest, as well as hills, mountains and bodies of water should be valued and preserved as an integral part of Hardwick's assets.~~

~~One new asset which will soon showcase Hardwick's scenic resources is Built on the old Lamoille County - St. Johnsbury Railroad bed, the Lamoille Valley Rail Trail (LVRT) provides walking and biking paths in the warmer months and snowshoeing, cross-country skiing, fat biking and snowmobiling in the winter. This year round trail is being developed on the old Lamoille County - St. Johnsbury Railroad bed. Supporting walking and biking in the spring to autumn and snowmobiling in the winter, this trail will allow residents and visitors the opportunity to see all Hardwick has to offer.~~

## Archeological resources

~~Archeological sites contain a fragile, complex and irreplaceable record of past human activity. Archeological sites differ from historic sites in that the information that exists is buried. For 10,000 years Native American persons focused their activities within river valleys and lake basins.~~

~~Evidence of prehistoric activities and occupations are contained within soil deposits of a cornfield or woodlot or are buried in a floodplain. Any prehistoric archeological sites constitute an essential link to our past. These sites are often the only source of information for the longest part of human history in Hardwick.~~

~~A National Park Service study of archaeologically significant riparian areas was done as part of the Vermont Rivers Study in 1986. The Park Service findings concluded that there were two areas of have been identified as ““expected moderate-to-high archeological sensitivity.” (see Historic, Scenic, & Archeological Resources Map). The first of these is located on both sides of Alder Brook (along Route 14) from the northern tip of Hardwick Lake to the northern edge of Eligo Pond in Craftsbury. The second area of archeological sensitivity is along the entire length of Greensboro Brook from the Lamolle River up to Caspian Lake in Greensboro.~~

~~This rating does not necessarily indicate that any archaeologically significant resources have been located in the area and none have yet been found; it only denotes that the topography, sun exposure, availability of food and other important natural resources exist in the right combination along this stream way to expect that the area could be archaeologically significant. Unlike the large sites found in Highgate and Swanton, any sites, if they exist, will likely be small.~~

~~...only utilized rivers and streams for food and water, but also as vital transportation corridors. Although there have been no Native American archaeological sites reported in Hardwick to date, this is largely due to a lack of professional archeological studies conducted in the area, the alteration of some portions of town's landscape through development, and the inundation of certain areas due to dam impoundment. Native American archaeological sites and historic archaeological sites related to early settlement, agriculture, industry and tourism likely remain to be discovered within Hardwick's borders, as they have been in most of the towns surrounding Hardwick.~~

~~Cumulatively and individually, these sites constitute tangible links to the rich cultural, religious, social, economic and technological traditions of past generations of Vermonters. These resources can help us understand little known chapters of Vermont's history. Precontact archaeological sites are often the only sources of information about the thousands of years of human history before European contact. Historic and archaeological resources are educational and recreational assets to communities and certain sites can be important attractions to locals and potentially even to tourists. The Vermont division of Historic Preservation hopes that sites will be preserved and protected whenever possible to ensure these vital cultural resources will be available to enjoy, appreciate, and study in the future. Any questions about archaeological sites can be directed to the Division for Historic Preservation's State Archaeologist.~~

## Goals, Policies, & Recommendations

### OVERALL GOAL

- To preserve Hardwick's heritage and character for current and future generations.

~~Our overall goal of preserving Hardwick's heritage and character can be achieved by accomplishing four other goals—the recording and preservation of the history of Hardwick; the preservation of historic structures; the protection of scenic resources; and the preservation of Hardwick's archeological record. By achieving these four goals, our heritage will be recorded, protected, and available for residents and visitors to learn and understand what makes Hardwick what it is today.~~

### GOALS

#### Historic resources

- To record and preserve the history of Hardwick.
- To preserve individual buildings, structures, and districts of historical value.

#### Scenic resources

- To protect the scenic resources in Hardwick for the enjoyment of the residents and the attraction of tourist businesses.

#### Archeological resources

- To preserve Hardwick's fragile archeological record.

### POLICIES

#### Historic resources

- ~~• Applications for grants to compile a history of Hardwick, including oral and written histories, are supported.~~
- ~~• Efforts to protect and preserve items and artifacts of historic significance to Hardwick are supported.~~
- Development within any designated historic districts should be in character with the surrounding architecture.
- ~~• Hardwick encourages the restoration and reuse of historic buildings.~~

#### Scenic resources

- Telecommunications towers and other large obvious structures should be carefully sited to minimize impacts on scenic resources.
- Development around the natural scenic resources identified should be sited and constructed in such a manner as to retain the natural scenic beauty of the areas. Removal of the natural vegetation on the site should be minimized and structures should be screened or hidden from view as best possible.
- Development should avoid ridgelines, especially those visible from roadways. Any ridgeline development should be set back from the edge of the hill and have a forested buffer to protect the view from the valley.
- Storage of abandoned vehicles and junk must comply with local and state limitations on such materials.

#### Archeological resources

- ~~• Projects occurring in the archeologically sensitive area should consider the potential impact of their project on archeological sites during the early stages of development. This will offer the best opportunity to mitigate potential impact.~~
- ~~• If at any point in the development of a parcel an archeological site is discovered, the state archeologist must be given a reasonable opportunity to investigate and suggest a means to mitigate the impact.~~

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

Historic resources

- Collect and make available the history of Hardwick and the preservation of items and artifacts of historic significance. Develop good legal, physical, and intellectual control of Hardwick's holdings and arrange and describe them to make them available to researchers of all types. Publish a comprehensive history of the Town of Hardwick. The Select Board should continue to support the Village Center Designations in the Hardwick Village and in East Hardwick, but should also consider applying for ~~Village Center Designation for East Hardwick and~~ Downtown Designation for the Hardwick Village.
- The Select Board and Planning Commission should investigate the possibility of pursuing Certified Local Government status.
- The Select Board should explore a tax stabilization program for downtown façade improvements.
- The Select Board should continue to provide funds that will make a significant contribution to those matching funds raised by local organizations and individuals for the purpose of maintaining or improving the above named historic structures owned by the Town of Hardwick. Line items for these funds for each of these buildings should be included as part of the town budget.

Scenic resources

- The Select Board should follow up with violations of the state abandoned vehicles and junk regulations.
- The Planning Commission should pursue funding to conduct a survey of local opinions on protection of scenic resources including such topics as telecommunications and wind towers.
- The Planning Commission should pursue funding to conduct an inventory of view corridors.
- The Planning Commission should consider establishing some incentives to maintain open land.

Archeological resources

- Where an archeological site is discovered on an undeveloped property or part of a property, the town supports the purchase of development rights on the effected portion as a means of compensating landowners for the loss of development rights. Purchase of development rights are always on a willing seller basis.

Overall

- ~~The Planning Commission should review all 'Act 250' applications for its impact on the historic resources of Hardwick. Where the application is determined to not conform to this chapter or any goal or policy, the Planning Commission, with input from the Historical Society, should participate in the 'Act 250' process in order to ensure that the concerns of the town are addressed.~~

## C. LAND RESOURCES

### Geography

The Town of Hardwick ~~is in north-central Vermont at the~~ ~~lies in the far~~ western edge section of Caledonia County and is bordered on three sides by three different counties: Orleans (north), Lamoille (west) and Washington (south). Hardwick comprises ~~It is~~ approximately 24,890 acres (38.6 square miles) and, ~~as discussed in the historic, scenic, and archeological resources section of this plan, boasts a varied landscape of~~ sloping farmland and forest, which extends up into, hills and low mountains, all drained by the narrow valleys of the Lamoille River and its tributaries. Elevations in Hardwick range from over 1,800 feet above sea level in the northwest corner of town to a low of about 810 feet along the Lamoille River near the border with Wolcott (see Shaded Relief Map).

### Topography

#### Elevation

Elevations in Hardwick range from over 1,800 feet above sea level in the northwest corner of town to a low of about 810 feet in the west where the Lamoille River crosses into the Town of Wolcott. Many communities in Vermont have established a policy to limit or restrict growth above 1,500 feet or 2,500 in elevation because of the higher cost of providing town and emergency services or because they wish to protect fragile ecosystems. ~~Higher elevations receive greater amounts of snow and inclement weather in the winter and are more costly to provide services to. Especially above 2,500 feet, soils become more fragile and vegetation is slower to recover from damage or disturbance. An examination of the Shaded Relief Map shows that~~ Elevation is generally not a limitation to development in Hardwick ~~as only~~ Only Buffalo Mountain and some high slopes in the northwest corner of town are above 1,500 feet.

#### Steep slopes

In Hardwick, slopes are considered “steep slopes” when they reach or exceed a 25% grade over a distance of 50 feet. Some soil types, particularly clay, are unstable at slopes as shallow as 5-8%, but based on Hardwick’s soil types, this is not usually an issue. The sand, gravel, and boulder soils found in town are generally stable to at least 30% provided that they have some vegetation cover (i.e. grass or trees). Steep slopes present problems when they are cleared for development or timber extraction because soil erosion is increased when vegetation is removed. Hardwick has many areas that are considered to have steep slopes (see Land Limitations Map). The map also identifies land with a slope over 20%. These areas have development limitations due to conventional wastewater rules established by the State of Vermont which prohibit wastewater systems on slopes above 20A second factor presenting considerable limitations to development is steep slopes. “Steep slopes” are defined as land having a slope of greater than 30% grade over a distance of 50 feet. Some soil types, particularly clay, are unstable at slopes as shallow as 5-8%. Based on Hardwick’s soil types this is not expected to be an issue. The sand, gravel, and bouldery soils found in town are generally stable to at least 30% provided they have some vegetation cover (i.e. grass or trees).

~~Steep slopes present problems when they are cleared for development or timber extraction as soil erosion is increased when vegetation is removed. Hardwick has many areas that are considered to have steep slopes (see Land Limitations Map). The map also identifies land with a slope over 20%. These areas have development limitations due to conventional septic rules established by the State of Vermont which prohibit septic systems on slopes above 20%.~~

### Geology

#### Bedrock



~~The shallow subsurface of Hardwick contains no major faults, but it does contain three major geologic units comprised of metamorphic rocks. lies at a major geologic transition line in Vermont (see Bedrock Geology Map). Rocks along and a bit east of Route 14 belong to the "limey" Northfield Formation, those further east to the Waits River Formation, and those to the west to the Moretown Formation. Points east of Buffalo Mountain, Hardwick Lake, and Route 14 North are in the Northern Vermont Piedmont while points west of that line are in the Northern Green Mountains. The piedmont areas are composed primarily of 'interbedded white to bluish limestones and grey phyllites'. The Green Mountains are 'interbedded grey to green phyllites and schists composed primarily of quartzites.' Between these two in a very narrow band of 'pale greenish-grey to black phyllites' which grade locally into grey to black slates. Along the southern border of Hardwick into Woodbury are the igneous plutonic outcrops of granite.~~

~~The bedrock materials under Hardwick contain few metallic minerals although, as is known from our the history of our granit industry, there is bedrock with quality dimension stone attributes around Buffalo Mountain and areas to the south. materials. Areas around Buffalo Mountain and Mackville contain quartz monotite (granite) and to the south, in Woodbury, is biotite granite.~~

#### Surface materials

~~Away from the river valleys the surface materials in Hardwick are primarily glacial till, (sometimes called boulder clay because it is composed of clay, boulders of intermediate sizes, or a mixture of these). except that where there are In wet areas, the surface materials will be peat and muck. The valley bottoms and floodplains are dominated by sand and gravel river deposits and, because highways usually follow rivers, these are best developed along Routes 14, 15, and 16. Additionally, there are. There are ice contact gravel deposits (glacial kames (steep-sided mounds of sand and gravel deposited by a melting ice sheet) along) along Route 16 near East Hardwick and along the north side of Route 15 towards Wolcott. The floodplains are primarily alluvium with sand and gravel deposits through Hardwick village east to Walden and south to Woodbury.~~

~~Hardwick is rich in both sand and gravel deposits which are valuable non-renewable resources and therefore it is important to plan for their wise use. (see Sand and Gravel Map). Both sand and gravel are non-renewable resources (once used up they cannot be replaced) and therefore it is important to plan for their wise use. Sand and gravel are needed for road repair and construction. These while gravel deposits are also important areas for recharging groundwater supplies.~~

~~(Information from: Wright, Frank M. *Geology for Environmental Planning in the Johnson-Hardwick Region, Vermont*. 1974. Vermont Geological Survey. Water Resources Department. Montpelier, Vermont and Stewart, David P. *Geology for Environmental Planning in the Barre-Montpelier Region, Vermont*. 1971. Vermont Geological Survey. Water Resources Department. Montpelier, Vermont)~~

## Soils

~~Soils develop from the underlying bedrock and/or sediment cover, which over a long period of time are combined with organic material and water to produce different soil types and thicknesses. The type of soil in an area can determine The soil structure attributes in Hardwick provide both opportunities and limitations to construction and agriculture. Depending on the physical and natural processes that formed the soils, they may have differing depth, composition, texture and layering. Soils also vary in how easily they absorb water and in their load-bearing capacity. Soils that pose limits to development are often characterized by excessive slope, shallow depth to bedrock, high seasonal water, instability or high erosion potential. Soils also vary in how easily they absorb water and in their load-bearing capacity. Where percolation rates are sufficient, soils can be used to treat effluent from a septic system. A Septic Suitability Map is included in this plan for conventional septic systems, but should not be used exclusively to identify areas that are likely to have suitable soils.~~

~~Soils are the primary requirement for conventional septic fields. Where percolation rates are sufficient, soils can be used to treat effluent from a septic system. A Septic Suitability Map is included in this plan for conventional septic systems (the most commonly used). This map is not intended to~~

~~infer that septic fields are possible on all sites in these highlighted areas. It should be interpreted that development in these areas are likely to find suitable soils but individual site tests are always need to confirm these generalized maps. Conversely, areas not identified as suitable may still have soils suitable for a conventional or mound septic system. Each property will need to be examined individually for limitations based on the characteristics above.~~

~~Soils also have qualities that make them productive for timber and agricultural by providing the medium and nutrients for growth. Primary Agricultural sols have been classified based on these and other criteria. A Soil Resources Map and Agriculture Values Map are included with this plan to show the general locations of these soils. products. Soil provides the medium and nutrients for growth, and crops grow best where these conditions are ideal. Primary agricultural soils have been classified based on these and other criteria. Whether the crop is hay, corn, or trees, the best use for that soil resource is agriculture or forestry. As a limited resource, management and conservation are the keys to long-term sustainability. Agricultural and forestry as a land use will be discussed more extensively in the land use chapter of this plan. A Soil Resources Map (as defined by Act 250) and Agriculture Values Maps (as defined by Agency of Agriculture) are included with this plan showing the general locations of these soils.~~

~~(Information from: Vermont Agency of Natural Resources, [http://academics.smcvt.edu/vtgeographic/textbook/physiographic\\_regions\\_of\\_vermont.htm#The Vermont Piedmont](http://academics.smcvt.edu/vtgeographic/textbook/physiographic_regions_of_vermont.htm#The_Vermont_Piedmont), Wright, Frank M. *Geology for Environmental Planning in the Johnson-Hardwick Region, Vermont, 1974.* Vermont Geological Survey. Water Resources Department, Montpelier, Vermont and Stewart, David P. *Geology for Environmental Planning in the Barre- Montpelier Region, Vermont.* 1971. Vermont Geological Survey. Water Resources Department, Montpelier, Vermont).~~

## Goals, Policies, & Recommendations

### OVERALL GOAL

- To protect and enhance Hardwick’s land resources, including productive farm and forestland and available earth resources, in order to maintain an adequate land base to sustain farming and forestry operations and to secure needed supplies of sand and gravel for the benefit of existing and future generations.

~~Hardwick’s land based resources, including productive soils and local sand and gravel deposits, represent truly unique, irreplaceable resources because of their physical properties, limited extent, and economic importance to the community. Productive agricultural and forestry lands also contribute significantly to the town’s rural and scenic character, and traditional way of life, which still sustains the local economy.~~

### GOALS

#### Earth Resources

- ~~To use Hardwick’s earth resources conservatively for the benefit of existing and future generations.~~

#### Soil Resources

- ~~To conserve and enhance the soils in Hardwick, especially primary soils, for present and future use.~~

### POLICIES

#### Earth Resources

- ~~Earth resources (primarily sand and gravel) should be identified and conserved until needed and reasonably developed in the public interest.~~
- ~~Development that is proposed near or over important earth resources should account for the potential loss of that resource.~~
- Extraction and related processing operations will be permitted only when it has been demonstrated that there will be no undue adverse impacts on the town or its residents. Potential conflicts between current land use and proposed extraction operations will be minimized. Strict standards for the operation, maintenance, and restoration of extraction sites may be established as

appropriate based on the unique conditions of the area affected. The full restoration of extraction sites will be ensured through the submission of site restoration plans.

Soil Resources

- ~~• All development within the town must be pursued with strict regard to the capability of the soils to support it.~~
- Development on slopes greater than 25 percent is prohibited.
- Further fragmentation of productive agricultural and forestland is to be avoided; continued access to productive forest and farmland will be ensured.
- Development within agricultural areas will be sited to minimize the permanent loss of agricultural soils. Non-agricultural structures should not be placed in open fields and meadows; such structures and related infrastructure will be set back from field edges and follow tree lines where feasible to minimize disturbance and visual impacts, and to maximize open productive space.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

Earth Resources

- ~~• The Planning Commission should conduct an inventory of sand and gravel sites to determine if further action is necessary to protect these resources.~~
- ~~• If necessary, the town should consider purchasing the rights to a gravel pit or to purchase a property with sufficient gravel resources to provide for the town's needs in the future.~~

Soil Resources

- Farm and forestland owners are encouraged to participate in the UVA program.
- The town supports the efforts of organizations in the purchase of development rights and other conservation methods provided the land protected meets the objectives of this plan. Where possible, the planning commission should review proposed purchases and comment based on the goals of this plan.
- ~~• Hardwick should form a conservation commission in the future to purchase and hold development rights of farms and forestland within the town.~~

Overall

- ~~• The Planning Commission should review all 'Act 250' applications for its impact on the land resources of Hardwick. Where the application is determined to not conform to this chapter or any goal or policy, the Planning Commission should participate in the 'Act 250' process in order to ensure that the concerns of the town are addressed.~~

## D. NATURAL AREAS & WILDLIFE RESOURCES

### Critical wildlife habitat in Hardwick

#### Deer Wintering Areas

Vermont's deer require specific winter habitat to survive the seasonally severe weather and heavy snowfall. Winter deeryards provide two features important to whitetail deer survival: shelter and food. Statewide, between 6% and 8% of Vermont's forestland is suitable for winter deer range under average winter conditions. Wintering areas do not change significantly between years and can be used by generations of deer over several decades if appropriate habitat conditions remain favorable. The Critical Habitat map shows areas in Hardwick identified as deer wintering habitat.

#### Bear Habitat

Bears require large areas of uninterrupted forestland for breeding. They also require travel corridors to move from one part of their habitat to another, especially as forested areas may be subdivided and developed. The Vermont Department of Fish and Wildlife prepared a map of black bear habitat in 1989 to indicate general areas of bear habitat.

According to this map, the Buffalo Mountain and the hills in the northwest part of town are areas that can support bears year round. Much of the river valleys support bears seasonally. Only the center of town does not have habitat to support regular use by bears.

#### Rare & Endangered Species Habitat

Rare plants and animals are important for a variety of reasons. Some are indicators of unusual habitats or of colder (or warmer) climates in Vermont's distant past. Others serve as indicators of environmental quality. Still others may provide compounds for medicines or agricultural or industrial products. Finally, some are attractive and add beauty to the natural landscape. Many uncommon species will disappear if not recognized and given some form of local protection.

Hardwick has two areas in town with rare, threatened or endangered species. To prevent disturbance or illegal collection of these species, the specific information on the species is withheld.

#### Fisheries

According to the 1986 Vermont Rivers Study, the entire length of the Lamoille River in Hardwick is recognized as a fishery. The river has naturally sustaining populations of rainbow trout, brown trout and brook trout. Additionally, Alder Brook and Haynesville Brook are fisheries as well. Alder Brook has brook trout while Haynesville Brook has rainbow and brook trout.

### Goals, Policies, & Recommendations

#### OVERALL GOAL

- Maintain the abundance and diversity of game and non-game wildlife in Hardwick.

~~Hardwick has an abundance of wildlife resources in town. The varied landscape allows for many species of wildlife and even some rarer species to pass through from time to time. Unlike some part of Vermont, the town does not contain large areas of sensitive habitat therefore Hardwick does not need to plan for large natural area preserves. The town does need to concern itself with the incremental loss of habitat and fragmentation of the forested landscape.~~

~~Protection of these resources provides opportunities for hunting and fishing as well as educational and recreational activities. For the most critical and sensitive habitats, purchase of the properties would be the most equitable. For other areas, land use regulations to cluster development away from critical habitats would be sufficient.~~

**GOALS**

Natural Areas

- ~~• To ensure fragile and natural areas are protected and preserved.~~

Wildlife Resources

- ~~• To maintain the native diversity of wildlife throughout Hardwick through the protection of critical habitats.~~

**POLICIES**

Natural Areas

- Development within or proximate to designated natural areas will take place in such a way as to preserve their value for education, science, research, aesthetics, and recreation.

Wildlife Resources

- Deer wintering areas and bear habitat must be protected from development and other uses that threaten the ability of the habitat to support the species. Commercial, residential, and industrial development should shall not occur in these areas. Developments will be permitted adjacent to deer wintering areas only if it is demonstrated, in consultation with the Department of Fish and Wildlife, that the integrity of the area for deer habitat will be preserved.
- Subdivisions and other development should avoid fragmenting habitat. Core habitat areas and interconnecting links (e.g. wetland areas, riparian zones, and travel corridors) are to be preserved.
- Rare, threatened and endangered plants and animals and their habitats will be protected and preserved through appropriate conservation techniques. Where appropriate, a buffer strip should be designed and maintained to ensure protection.

**ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION**

Natural Areas

- ~~• Hardwick supports the acquisition of natural and fragile areas by local or state conservation agencies whose goal is protection of the areas.~~
- ~~• The Planning Commission should conduct a study to determine how much of the fragile habitats and natural areas are protected and determine what gaps exist in the conservation effort.~~

Wildlife Resources

- Hardwick should consider forming a conservation commission in the future to purchase properties and hold development rights of critical habitats within the town.
- As a result of living in Hardwick, many landowners have an ethic to be good stewards of the land. The Planning Commission recognizes that more can be accomplished by educating, advising, and assisting landowners with their natural and wildlife resource concerns than could be accomplished through regulations. The Planning Commission will support and provide guidance to any property owner with questions or concerns about their natural resources.

Overall

- ~~• The Planning Commission should review all 'Act 250' applications for its impact on the fragile and natural areas of Hardwick. Where an application is determined to not conform to this chapter or any goal or policy, the Planning Commission should participate in the 'Act 250' process in order to ensure that the concerns of the town are addressed.~~

## E. WATER RESOURCES

Water resources take on a variety of forms and functions. They provide rivers and lakes upon which to boat, fish and swim; groundwater to drink; and wetlands to store floodwaters and filter natural and man-made contaminants. Water resources provide numerous habitats for a variety of aquatic and riparian plant and animal communities, and support numerous economic activities such as fishing and boating.

Water resources also unfortunately end up serving as repositories for pollutants from runoff and leaking storage tanks including pesticides, herbicides, sediments, landfills, septic systems and underground storage tanks. These contaminants kill fish and plants, destroy existing and potential drinking water supplies and preclude recreational activities.

### Rivers and streams

Hardwick is fortunate to have abundant riparian resources. Its numerous brooks, streams and rivers helped shape the local landscape. Nearly all of the rivers and streams in Hardwick contribute to the Lamoille Drainage Basin. A very small portion of land on the Wolcott line near Greensboro drains into the Black River (see Water Resources Map).

#### Riparian Habitats

Plant life such as trees, shrubs, grasses and herbs along stream banks and river corridors serve to provide both food and shelter for a great many wildlife species. Several of Vermont's wildlife groups, including deer and moose are highly dependent on riparian areas for their habitat needs. Maintaining riparian habitats is very important to both water quality and wildlife habitat.

### Lakes and ponds

Hardwick is also fortunate to have lakes and ponds in town that support both public and private recreation opportunities and important plant and animal habitats. Hardwick has two lakes or ponds greater than 20 acres as identified by the *Vermont Lakes and Ponds Inventory (1981)* and two smaller ponds of at least ten acres.

Hardwick Lake is an artificial lake created by an impoundment behind the Hardwick Lake Dam. The lake is at an elevation of 797 feet, has a surface area of about 145 acres, and a drainage basin area of approximately 75,500 acres. According to a state watershed assessment report (2001), the aquatic life is not fully supported due to the extreme water level fluctuations. The lake is drained each winter to reduce ice dams and flooding in the village. Even so, the Town of Hardwick recognizes it as a scenic resource.

Tuttle Pond is a small secluded pond with a rich biological community. According to the watershed assessment report, there are indications that the pond may be impacted by nearby pastureland. As a result the state classifies Tuttle Pond as threatened. Tuttle Pond is a natural pond about 21 acres in size, has a maximum depth estimated at only 5 feet, and is supported by a 342 acre drainage area.

The two smaller ponds in town include Little Eligo Pond (15 acres) and Mackville Pond (11 acres). ~~Little Eligo Pond is considered to fully support aquatic life but is threatened by sedimentation from nearby gravel operations. Mackville pond is the only pond in Hardwick whose water quality is not considered threatened.~~

### Wetlands

The term wetland is used to refer to areas that are inundated with water either seasonally or year-round. They are commonly referred to as swamps, marshes, bogs, fens or other such names. Wetlands share three basic characteristics:

1. The presence of water at or near the ground surface.
2. The presence of water dependent plants occurring on site; and
3. Common types of soil that have formed as a result of the presence of water.

Wetlands serve a number of important functions, including storm water retention, erosion control, ground water recharge and wildlife habitat.

~~The U.S. Department of the Interior has mapped wetlands and each town has a set of National Wetlands Inventory Maps. These maps were made using aerial photos and are useful for assessing the general character of a particular area, but are not accurate enough to determine the nature of a particular property without a site visit.~~

Vermont's wetland regulations are based upon the National Wetlands Inventory. They designate all of the wetlands identified by the inventory in Hardwick as Class II, and require a 50-foot vegetated buffer between the wetland and any adjacent land development (see Water Resources Map). Any wetland that is found on the ground but is not on the map will generally be classified as class III and require a 25 foot buffer.

### Groundwater resources

Groundwater is the source for over 90% of the drinking water for rural communities in Vermont. It is replenished through rain and surface waters which percolate through the soil. Any activity which introduces contaminants directly into the ground (such as underground storage tanks, septic disposal fields, and agricultural activities) can affect groundwater quality. Since surface waters may also travel underground, surface water quality may affect groundwater quality as well.

~~Since many residents of Hardwick receive their water through private wells and springs, it is important to protect the quality of well water through appropriate separation between wellheads and septic disposal fields. This is addressed at the state level through the issuance of water and wastewater disposal permits.~~

~~According the Vermont Geological Survey, the lands adjacent to Route 15 from the intersection with Route 14 North to Route 16 have soil and geological characteristics that provide the best potential for groundwater. Good water potential can also be found just east of Route 14 north to within a mile of Greensboro and along Route 14 south to the Woodbury line.~~

Public groundwater sources in Vermont ~~have Source Protection~~ are assigned Wellhead Protection areas (WHSPA). WHSPA's are defined as the surface and subsurface area surrounding a water-body or well field supplying water for a public water system. ~~The state Agency of Natural Resources (ANR) is responsible for the Vermont Wellhead Protection Program. A public water supply is defined by the Safe Drinking Water Act as one serving fifteen or more service connections or 25 or more people served at least 60 days per year.~~ There are three wellhead-source protection areas in Hardwick. The Hardwick Village WHSPA, the East Hardwick Fire District WHSPA, and the Greensboro Bend WHSPA.

### Water quality

Two issues have been in the press over the past few years with regards to water quality - agricultural runoff and storm water runoff from impervious surfaces such as roads, parking lots and roofs. Both of these sources of pollution impact our streams and rivers although agricultural runoff may be more important a factor in Hardwick. The State of Vermont is planning significant changes to storm water control laws, which will change the way storm water from all sources within a community is regulated.

The Agency of Agriculture has produced 'Accepted Agricultural Practices' (AAPs) and 'Best Management Practices' (BMPs) for farms and similar standards for silvicultural operations (AMPs and BMPs are also discussed in Land Resources). Where farms are believed to be having an impact on water quality, BMPs and other measure can be used to help prevent the runoff from entering the streams.

~~The Planning Commission will assist landowners who are looking to adopt management practices that prevent agricultural runoff. There are many organizations in willing to contribute supplies and expertise to resolve water quality issues if the interest exists.~~

Storm water runoff is not as significant a problem in Hardwick as it is in some communities because we lack large commercial centers and the associated parking lots. New changes in state regulation are requiring tighter regulation of this issue. ~~Taking some precautions now may prevent problems in the future. For instance, parking areas can be set back from streams and wetlands; keeping total impervious areas below 10% of the lot area; and landscaping to retain runoff on the grounds as opposed to channeling water into streams will help prevent the waterways in Hardwick from being contaminated.~~ Treatment of existing and newly planned storm water discharges will be a requirement of all communities in the future.

## Goals, Policies, & Recommendations

### OVERALL GOAL

For Hardwick's water resources, including its lakes, ponds, streams, rivers, wetlands, groundwater, and associated habitats, to be preserved and, where degraded, improved in order to ensure water quality for drinking, recreation, and the environment.

Water is easier and cheaper to keep clean than it is to clean up once polluted. For the most part, Hardwick's water resources are generally clean. Our ponds and wetlands are well protected. The efforts of all of our residents are important to maintain water quality for drinking, swimming, fishing, boating, and wildlife.

### GOALS

#### Rivers and Streams

- ~~• To ensure Hardwick's rivers and streams contain clean water, a healthy riparian habitat and stable stream banks.~~

#### Lakes and Ponds

- ~~• To maintain the overall health of our lakes and ponds for recreation and environmental purposes.~~

#### Wetlands

- ~~• To preserve and protect wetlands from pollution, filling, and any other uses or activities that will result in their degradation or a reduction in its capacity to provide wildlife habitat, flood control and water storage.~~

#### Flood Hazard Areas

- ~~• To protect the health, safety and welfare of the residents of Hardwick by limiting development in flood hazard areas to agriculture, recreation, and open space.~~

#### Groundwater

- ~~• To maintain the quality and quantity of local groundwater supplies.~~

#### Water Quality

- ~~• To maintain and, where degraded, improve the water quality across the town.~~

### POLICIES

#### Rivers and Streams

- Development within or proximate to designated rivers and streams should take place in such a way as to avoid crossing the stream and to protect and maintain a natural vegetative buffer.
- All bridges and culverts should be built to standards recommended by the Better Back Roads Program to ensure minimal impacts on rivers and streams.

#### Lakes and Ponds

- Densities of residential development and, in particular, septic fields for those homes, are a prime contributor to lake and pond pollution. Controls on density in areas with on-site septic systems can have a profound positive impact on water quality.
- A naturally vegetated buffer around the lakeshores would protect the water quality from



contaminants as well as protecting the scenic values of the areas.

- ~~• A management plan for large lakes and ponds should be developed to determine boating, swimming, fishing and other recreational activities to ensure ecological and recreational goals are met for the areas.~~

Wetlands

- All class 2 wetlands are required to have a 50-foot buffer. All class 3 wetlands are required to have a 25 foot buffer. No filling or draining of wetlands is permitted.

Flood Hazard Areas

- ~~• No development should occur within a flood hazard area.~~
- ~~• Agriculture, recreation fields, parks, and open space are all appropriate uses of flood hazard areas.~~

Groundwater

- ~~• Withdrawal of groundwater should not exceed the recharge rate over a reasonable period of time.~~
- No form of land waste disposal or storage of possible contaminants should be permitted in high water table and ground water recharge areas.

Water Quality

- All construction where soil is to be disturbed should provide adequate erosion control so that no soil moves off site or into surface waters or wetlands.
- Agriculture and forestry must abide by AAP and AMPs. Where an activity may have a negative impact on water quality, BMPs are recommended.
- Total impervious surfaces on developed sites should be less than 10% of the site. Where appropriate, stormwater technologies or techniques should be used to prevent runoff from directly entering any surface water.

**ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION**

Lakes and Ponds

- ~~• If necessary in the future, shoreline zoning regulations should be considered to regulate development around Hardwick Lake and Tuttle Pond or any of the smaller ponds in town.~~
- Public education and signage should be placed at all boat accesses and public shoreland to notify the public of Eurasian Milfoil and other invasive species and how to protect the lake.

Wetlands

- The planning commission should consider acquiring funds to have a wetland inventory of the town conducted.

Flood Hazard Areas

- The town should consider purchasing properties or development rights of properties within the floodplain to permanently prevent development in those areas.
- ~~• The planning commission should consider creating a plan for the flood hazard area to address recreational opportunities, flood hazard protection, and the potential for implementation of water quality measures.~~

Groundwater

- ~~• The Planning Commission should identify potential threats to groundwater supplies.~~
- ~~• The town should adopt Wellhead Protection Area zones into the zoning bylaws to restrict uses, which present a risk of contamination to the groundwater.~~

Water Quality

- ~~• The town should ensure that all homeowners understand the importance of the proper disposal of household hazardous waste. The pickup of such materials should be cheap and easy in order to encourage compliance.~~

Overall

- ~~• The Planning Commission should review all 'Act 250' applications for its impact on the water resources of Hardwick. Where an application is determined to not conform to this chapter or any goal or policy, the Planning Commission should participate in the 'Act 250' process in order to ensure that the concerns of the town are addressed.~~

## F. FLOOD RESILIENCE

~~Vermont Statutes Act No. 16 became effective on May 6, 2013. It is an act relating to municipal and regional planning and flood resilience. It states that as of July 1, 2014, municipal and regional plans must contain a Flood Resilience Element.~~

~~**Goals:** To encourage flood resilient communities the goals in Act 16 are:~~

- ~~a) New development in identified flood hazard, fluvial erosion, and river corridor protection areas should be avoided. If new development is to be built in such areas, it should not exacerbate flooding and fluvial erosion.~~
- ~~b) The protection and restoration of floodplains and upland forested areas that attenuate and moderate flooding and fluvial erosion should be encouraged.~~
- ~~c) Flood emergency preparedness and response planning should be encouraged.~~

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### **Minimum Requirements:**

~~A plan for a municipality shall include a flood resilience plan that:~~

- ~~(1) identifies flood hazard and fluvial erosion hazard areas, based on river corridor maps provided by the Secretary of Natural Resources pursuant to 10 V.S.A. § 1428(a) or maps recommended by the Secretary, 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; and~~
- ~~(2) recommends policies and strategies to protect the areas identified and designated under section (1) above and to mitigate risks to public safety, critical infrastructure, historic structures, and municipal investments.~~

### **State of Vermont's Obligations**

Act 16 requires the Secretary of Natural Resources to aid and support municipalities in their work to adopt municipal flood resilience plans and to write related bylaws regarding river corridors, floodplains, and buffers. The State has created the Flood Resilient Communities Program / Focus on Floods initiative which hosts a one-stop web portal to support municipal officials.

Additionally, Act 16 requires that the Secretary of Natural Resources shall establish a river corridor and floodplain management program to aid and support the municipal adoption of a flood resilience plan and new flood-related bylaws. Under the River Corridor and Floodplain Management Program, the Secretary shall:

- (1) assess the geomorphic condition and sensitivity of the rivers of the State and identify where the sensitivity of a river poses a probable risk of harm to life, property, or infrastructure.
- (2) delineate and map river corridors based on the river sensitivity assessments required under subdivision (1) of this subsection according to a priority schedule established by the Secretary by procedure; and
- (3) develop recommended best management practices for the management of river corridors, floodplains, and buffers.

In Hardwick, a great amount of work has already been done on the Lamoille River to acquire the scientific information required in (1) above. In February, 2009, the State released the Upper Lamoille River Stream Geomorphic Assessment Phase 2 Report which covers the river from Greensboro to Hardwick. In 2010, the Lamoille River Corridor Plan was released covering the section from Hardwick to Johnson. As Hardwick carries out its Flood Resiliency Plan the information contained in these studies will need to be updated periodically for the Lamoille River and new information will need to be obtained for the other river corridors, floodplains, and buffers in Hardwick.

Upper Lamoille Phase 2 Stream Geomorphic Assessment, Greensboro and Hardwick, 2009

[https://anrnode.anr.state.vt.us/SGA/report.aspx?rpId=34\\_P2A&option=download](https://anrnode.anr.state.vt.us/SGA/report.aspx?rpId=34_P2A&option=download)

Lamoille River Corridor Plan, Hardwick to Johnson, December 15, 2010

[https://anrnode.anr.state.vt.us/SGA/report.aspx?rpId=31\\_CPA&option=download](https://anrnode.anr.state.vt.us/SGA/report.aspx?rpId=31_CPA&option=download)

### Flood Risks in Hardwick

In Hardwick, most flooding occurs when too much rain is delivered too quickly or for too long a period and this causes the streams and rivers to overflow their banks. The Lamoille River quickly becomes a rushing torrent in the hours after a particularly large thunderstorm or after several days of slow, steady rain. If the river is already “running high” due to the melting of the winter’s snowpack, the effect of these rainfall events are even more dramatic.

Additionally, if large sheets of ice or woody debris are “floated” by this rising water, they can form ice-jams or debris-dams at sites where the river is constricted by a sharp bend or a bridge. These blockages of the river often start small, but as the river backs up behind them, then more ice or debris are floated off of the streambed and banks to add to the jam/dam. This can create a large, long “lake” that fills the river valley from side to side, drowning all roads, facilities, and buildings located there. Once formed, these jams/dams can be long lasting and difficult to remove, especially when the roads to access them are several feet beneath the newly formed “lake”. The damage to built structures caused by being submerged by water and/or rammed by icesheets/trees can be enormous. Also, there is the increased risk to human life and property due to these road closures because this impairs the response of fire and rescue emergency vehicles.

~~Needless to say, the best way to deal with flooding in Hardwick is to attempt to prevent as many of these events from happening as possible, or at least to try to reduce the damage they now can produce. Thus, we are left with the need to develop and enact a Flood Resilience Plan for our town in order to protect its residents and their property.~~



Hardwick, Vt.—Looking up toward Robie's dam from Wolcott St., November 4.



Hardwick, Vt.—The Chasm washed out at Mackville in the November Flood.

Photos from the Flood of 1927



Long Reach Breaks Up Ice Jam in Hardwick  
(Copyright 2012 Tibbits Equipment Services, Inc. All Rights Reserved.)

### Floodplains

The most important function of a floodplain is the storing of runoff during heavy rains and spring thaws, thus slowing the velocity of water flowing downstream. The resultant gradual release of stormwater minimizes erosion, streambank scouring and downstream flooding. Floodplains also provide important recreational, agricultural, aesthetic, drainage, and wildlife functions. The continuation of each of these functions requires consideration of the watercourses and their associated shorelines when designing for construction in their vicinity.

~~Despite the attractiveness of their level surfaces, floodplains are considered unsuitable for development for the following reasons: potential danger to life and property, loss of flood water storage, effects on channel capacity, impairment of underground sewage disposal systems, and negative effects on downstream communities. However, not all development is equally damaging to a floodplain's flood resiliency. Channel straightening, construction filling, and parking lot paving are much more destructive than using the floodplain for agricultural purposes or as recreation sites such as parks and ball fields.~~

### Flash Floods

Other flood hazards result from flashflood situations in particular along steeper stream sections. Clearing of vegetation cover and constructing impervious surfaces, like roofs and parking lots, increases storm runoff particularly in higher elevations. To prevent flash flood situations, developments cannot increase the volume or velocity of streams. Channelizing and straightening streams increases stream velocity and increases the risk of flash floods. Many times roads and driveways up steep hills create perfect conditions for flash floods because they are designed to rapidly drain water from the surface and send it downhill in a straight steep ditch. The Better Backroads Program from the state has road standards to avoid erosion and flashfloods resulting from road design and construction.

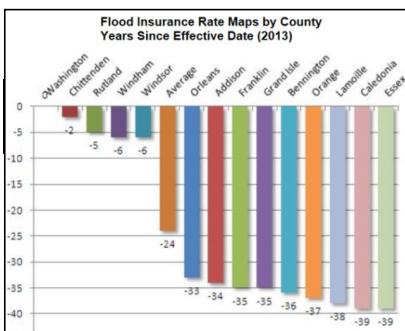


Montgomery Flash Flood of 1997  
(Damage: \$8 million in Franklin County)

### FEMA Flood Insurance Rate Maps (FIRMS)

To identify a community's flood risk, FEMA uses data to create the flood hazard maps that outline your community's different flood risk areas. Some floodplain areas are shown as high-risk areas or Special Flood Hazard Areas (SFHAs). Some parts of floodplains may experience frequent flooding while others are only affected by severe storms. However, areas directly outside of these high-risk areas may also find themselves at considerable risk. Changing weather patterns, erosion, and development can affect floodplain boundaries. ~~FEMA is currently updating and modernizing the nations Flood Insurance Rate Maps (FIRMS). These Digital flood hazard maps provide an official depiction of flood hazards for each community and for properties located within it. Unfortunately, it has been 40 years since the Effective Date for the FIRM's for Caledonia County and no updates are presently scheduled. The Flood Insurance Rate Map for Hardwick dates to 1984 and received only minor updates since then; once in 1987 and again in 2002.~~

Figure 4: Age of FIRMS in Vermont



### Special Flood Hazard Area

A Special Flood Hazard Area (SFHA) is a FEMA-identified high-risk flood area ~~where flood insurance is mandatory for properties - that it~~ is most often in a floodplain, the comparatively low-lying land adjacent to a waterway, and is generally defined according to its frequency of flooding. For example, the “100-year floodplain” is that area subject to inundation in the “100-year flood” (a flood that has a 1%-chance of occurring in any given year). Statistically, a homeowner in the 100-year floodplain has a 26% chance of being flooded during the life of a 30-year mortgage, and many owners are unaware that standard homeowner’s insurance does NOT cover damages from a flood. That is why lenders require floodplain properties with federally-backed mortgages to carry flood insurance. However, floods rarely follow the precise boundaries on a map, especially flash floods associated with sudden, heavy downpours. Flood damages can and often do occur outside the limits of the regulatory floodplain. In Vermont, two-thirds of flood damages occur outside of federally mapped flood areas.

If FEMA has conducted a Flood Insurance Study, the information from this study will be shown on the map. The insurance study includes statistical data for river flow, storm tides, hydrologic/hydraulic analyses, and rainfall and topographic surveys. Cross sections of the floodplains will be shown on the map, along with flood elevations for the 100 year floodplain. These are called **base flood elevations**.

The **floodway** is the area that conveys the flood-waters from the stream channel into outlying areas. This is where the floodwaters run the fastest and the deepest, so any obstruction in this area could have disastrous effects. This sample DFIRM from Two Rivers Ottauquechee shows how this information may be presented.

Figure 5: Parts of a Special Flood Hazard Area

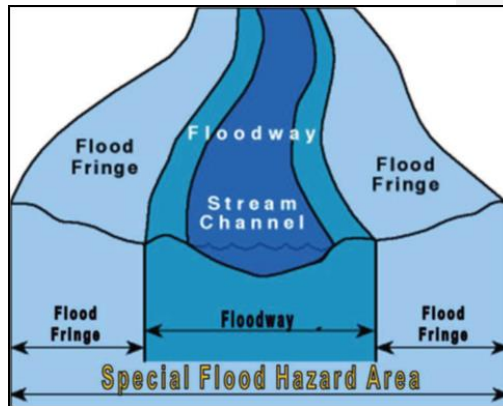
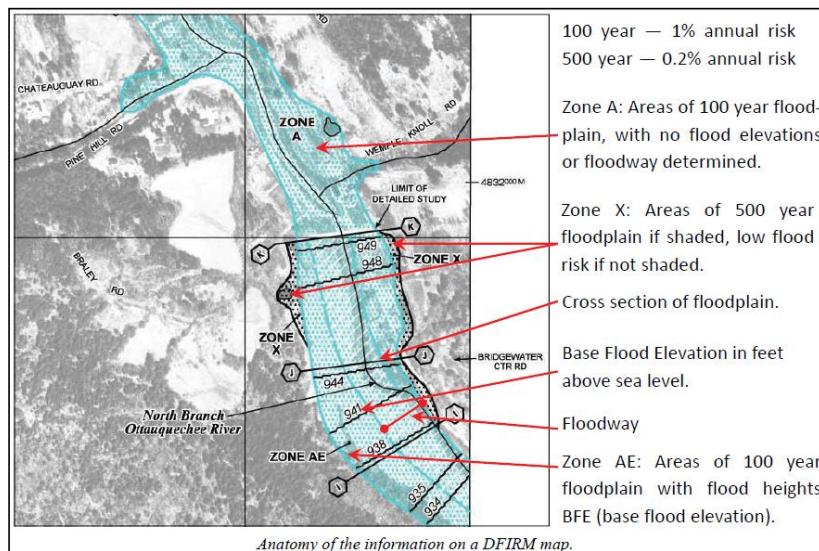


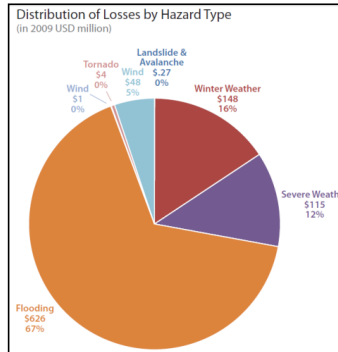
Figure 6: Features of a DFIRM (Two Rivers-Ottawuechee Regional Commission)





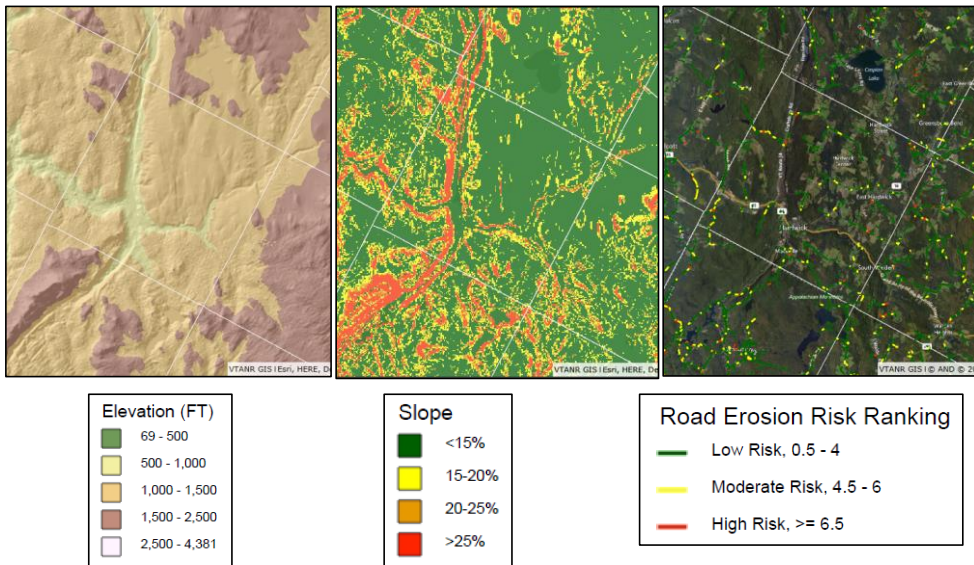
flood helps to explain why flooding in Vermont accounted for 67% (\$626 million) of the losses due to Hazard Events between 1960 and 2009. Presently, Hardwick has 35 flood insurance policies and all but five are for structures in the Special Flood Hazard Area. The total coverage value is more than \$3.7 million and represents the third highest coverage value in the county. There have been 56 claims since 1978, representing a total payout of more than \$260,000.

**Figure 9: Vermont Hazard Losses, 1960-2009**



**The Lay of the Land & Flood Damage Risk**

The Town of Hardwick is situated in an area where the landscape greatly controls where buildings, roads, and agriculture can occur, and thus both creates a large risk of flood damage while also limiting the options for flood mitigation. As can be readily seen on the series of maps below, the majority of Hardwick is relatively gently-sloped land lying at elevations between 1000 and 1500 feet. This surface is incised by three major river valleys; Lamoille River (east-west), Alder Brook (north-south), and Cooper Brook (south-north). The sides of these river valleys represent the moderate (yellow) and steep (red) slopes shown on the middle map below. The last map illustrates how agricultural fields are confined to the “flatter” area away from these rivers, as well to the wider portions of the level floodplains alongside them, with the remaining areas of town being forested. The highways and many roads follow the river valleys and their tributaries as seen by Route 16 and much of Route 15 bordering the Lamoille River and by Route 14 traveling alongside Alder Brook, the Lamoille River, and Cooper Brook. Thus it makes sense that the moderate and high risks of Road Erosion (in yellow and red) are found in areas of steeper slopes that are also associated with the rivers and streams.



**Figure 10: Road Erosion Risks in Hardwick**

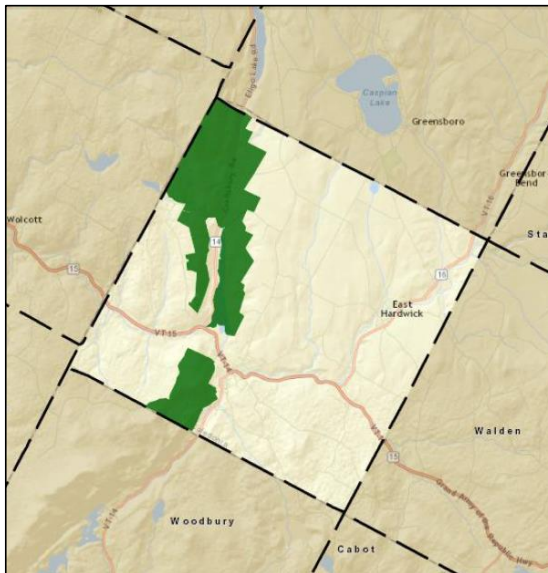
### Forest Reserve District

A large portion of western Hardwick has been zoned as Forest Reserve (FR) districts. These districts flank Route 14 and Alder Brook in the north and the western side of Route 14 in the south. As seen on the maps above, these districts overlie some of the steepest slopes in Hardwick. The purpose of the Forest Reserve district, according to Hardwick’s Unified Development Bylaws, is to protect significant forest resources and limit development to low densities in areas with steep slopes, shallow soils, unique or fragile resources, significant wildlife habitat, and poor access to town roads and community facilities and services. Zoning of these districts as Forest Reserves also acts to preserve them as Upland Forested Areas. ~~The second listed goal of Act 16 reads as follows (emphasis added);~~

~~(B) The protection and restoration of floodplains and upland forested areas that attenuate and moderate flooding and fluvial erosion should be encouraged.~~

~~Thus~~ With its zoning bylaws, Hardwick has already done much to identify and protect the Upland Forested Areas in the western portion of the town and as a result, has helped to mitigate the flood damage from past storm events. However, the Town should examine the remaining areas of Hardwick to determine if other areas should be evaluated and protected accordingly in order to preserve these areas and enhance their ability to “attenuate and moderate flooding and fluvial erosion” into the future.

Figure 11: Forest Reserve Districts in Hardwick



### Culverts & Bridges

The combination of roads, steep slopes, and running water not only constitute areas of higher Road Erosion risk, it also often marks areas where the Town of Hardwick has installed and maintains culverts and bridges. The Vermont Online Bridge and Inventory Tool (VOBCIT) database shows that Hardwick has 474 culverts, with the majority found to be in fair to poor condition. The two critical culverts are on Porter Brook Road and Scott Road.

Table 5: Hardwick Highway Culvert Conditions (2013)

Excellent	6	1.3%
Good	219	46.2%
Fair	192	40.5%
Poor	55	11.6%
Critical	2	0.4%

Source: VOBCIT



Critical (failing) means that less than 25% of the culvert was open at the time it was assessed. This is due to sediment load which is deposited during storm events. Undersized or “plugged” culverts often result in storm runoff flowing over the road or highway, rather than under it, and damaging or even washing out the roadway. The Northeastern Vermont Development Association (NVDA) annually assists towns in updating their culvert data by hiring consultants to do the field work using GIS and then uploading this to the VOBCIT. The VTrans Maintenance Districts ideally want an inventory done every three years, but NVDA can only do 4-5 towns per year. NVDA is working to get towns to use VOBCIT to input their annual updates so that they will always have an up to date inventory.

NVDA did a VOBCIT training in January 2014 which was attended by the Head of Hardwick’s Public Works Department.

There are 19 bridges on town highways in the VOBCIT database, but the condition, year built and other specifics have not been entered in the database.

### Critical Facilities

Critical facilities are essential to a community’s resilience and sustainability. In general, there are two kinds of facilities that a community would consider “critical” during and after a flood:

- Those that are vital to the health and safety of the public before, during, and after a flood, such as emergency responders, schools, and shelters; and
- Those that, if flooded, would exacerbate the problem, such as a hazardous materials facility, power generation facility, water utilities, or wastewater treatment plant.

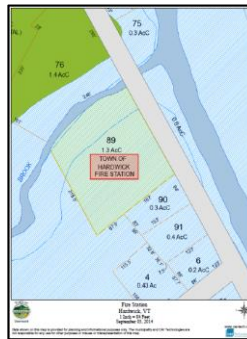
Because they are defined by their ability to quickly and efficiently respond to and recover from floods, critical facilities should never be flooded, and their critical actions should never be conducted in floodplains if at all avoidable.

Hardwick has two critical facilities in the Special Flood Hazard Area - the fire station and the Hardwick Electric garage. The town should consider a full range of options to mitigate risk to these structures in the future in order to ensure continuity of services during a disaster. Potential mitigation measures should include either relocation of the facility or its elevation/flood-proofing to the 500-year flood level (this is the elevation for a flood event that has a 0.2% annual chance of flooding).

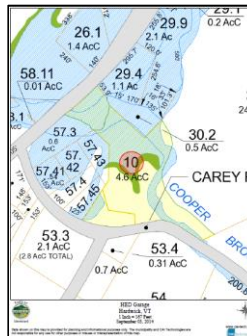
### Damage to Infrastructure

The following table shows damage to Hardwick’s infrastructure from flooding since the 1990s. Generally, the town has received about 80% of the total cost from FEMA. Though the severe ice storm in 2014 had no flood-related damage, the other three severe storms and Tropical Storm Irene did cause erosional damage to Hardwick’s roads as well as damaging HED’s infrastructure.

**Figure 12: Hardwick Fire Station**



**Figure 13: HED Garage**



**Table 6: Flood-Related Declarations and FEMA Public Assistance, 1999 to Present**

FEMA Declaration#	Declaration Date	Description	Total FEMA Public Assistance Received
FEMA-DR-1307	Nov-99	Severe Storm (Town of Hardwick, Hardwick Electric Department)	\$56,041
FEMA-DR-1559	Sep-04	Severe Storm (Town of Hardwick)	\$11,796
FEMA-DR-1715	Aug-07	Severe Storm (Town of Hardwick)	\$84,103
FEMA-DR-4022	Sep-11	Tropical Storm Irene (Town of Hardwick, Hardwick Electric Department)	\$23,473
FEMA-DR-4163	Jan-14	Severe Ice Storm (Hardwick Electric Department)	\$30,317
<b>Grand Total</b>			<b>\$205,730</b>

Source: Fema.gov. FEMA and the Federal Government cannot vouch for the data or analyses derived from these data after the data have been retrieved from the Agency's website.

**Emergency Relief and Assistance Fund (ERAF)**

When a community requires public assistance, FEMA funds generally cover 75% of the loss. To date, Vermont’s Emergency Relief and Assistance Fund (ERAF) has provided half of the matching funds (about 12.5%) required by FEMA, and the town has assumed the remainder of the cost. In October 2014, however, new legislation will tie the State’s percentage of ERAF funding to specific local initiatives to reduce flood-related risks and prepare for emergencies.

For federally declared disasters that occur after October 23, 2014, ERAF will contribute half of the required match only if the town has taken all the following steps to reduce flood damage:

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

Otherwise, the level of State funding will be reduced to 30% of the remaining match, which will usually be about 7.5% of the total cost of the loss.

The Town of Hardwick’s Local Hazard Mitigation Plan ~~expired in 2010~~ was approved by FEMA in 2018, but work is currently underway to develop a new plan. Once approved by FEMA, the town will be eligible to receive FEMA funds to mitigate risks (like relocate or elevate a flood-prone structure) or to purchase generators.

~~Past loss data is not a reliable predictor of future losses. Nevertheless, the following table illustrates the potential financial impact to the Town if it fails to meet all of the ERAF requirements in a future loss. This table uses loss data from a flood in August 2007. What this illustrates is that Hardwick’s share of the cost of a similar storm would increase 40% from \$11,214 to \$15,700.~~

**Table 7: Hardwick Public Assistance Received in FEMA-DR-1715**

Actual Funding from August 2007 Storm					What funding scenario would have been AFTER 10/23/14	
Damage	Project Total	FEMA Share	State Share	Town Share	State Share	Town Share
Mackville Road	\$38,626	\$30,430	\$4,098	\$4,098	\$2,459	\$5,738
Scott Road	\$36,709	\$28,853	\$3,928	\$3,928	\$2,357	\$5,499
Hopkins Hill road	\$14,438	\$11,487	\$1,476	\$1,476	\$885	\$2,066
Porter Brook Road	\$3,659	\$2,911	\$374	\$374	\$224	\$523
Pumpkin Lane	\$12,601	\$10,025	\$1,288	\$1,288	\$773	\$1,803
Public Buildings &	\$500	\$398	\$51	\$51	\$31	\$72
<b>TOTAL</b>			<b>\$11,214</b>	<b>\$11,214</b>	<b>\$6,729</b>	<b>\$15,700</b>

Source: Fema.gov. FEMA and the Federal Government cannot vouch for the data or analyses derived from these data after the data have been retrieved from the Agency's website.

**Flood Resilience Plans, Goals, & Strategies**

Flood hazard areas in Hardwick have been identified along the Lamoille River and many of its tributaries. The flood hazard areas are shown on the Water Resources Map associated with this plan and are based on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps which can be found in the Town Clerk's office. It must be noted that the Flood Insurance Rate Map (FIRM) for Hardwick dates to 1984 and received only minor updates since then; once in 1987 and again in 2002. On Hardwick's FIRM, "Areas of Special Flood Hazard" consist of areas known as the "100-Year Floodplain." These areas, according to FEMA, have a 1% or greater chance of flooding in any given year, based on historic data. This definition, however, cannot predict the likelihood or frequency of future flooding. In fact, a "100-year flood event" can occur several times over the course of just five years. Flooding can and does occur in areas outside of the areas delineated on FEMA maps. In fact, the 1984 FIRM notes that it "does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside the Special Flood Hazard Areas."

Due to Hardwick's history of flooding, Hardwick participates in the National Flood Insurance Program and regulates development in the flood hazard areas according to the minimum standards established by FEMA. These regulations control the use and construction of structures in the flood hazard areas. An important benefit to adopting the rules is that it allows all property owners in Hardwick to purchase flood insurance — whether or not the property is located in a Special Flood Hazard Area. Homeowner's insurance policies do not cover flood damage. Hardwick residents are strongly encouraged not to develop in the flood hazard areas as they risk significant financial loss if a flood occurs.

Meeting the minimal requirements for participation, however, will not necessarily protect Hardwick from future floods and flood-related losses. In fact, minimal compliance with NFIP standards will not begin to address the losses caused by fluvial erosion. River corridors — the areas subject to fluvial erosion caused by shifting rivers and streams — are not identified on the FEMA maps. Ironically, this type of flood-related damage occurs frequently in Vermont, due in part to the state's mountainous topography. This form of damage can be sudden and dramatic in major storms.

The Town currently regulates development in the Special Flood Hazard Area in accordance with FEMA's minimum standards. If new development is to occur in the SFHA, it must meet certain standards, such as elevation and floodproofing. While minimally compliant flood hazard regulations will allow property owners to purchase flood insurance at more affordable rates, the regulations

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should not be seen as an effective way to minimize flood risks. The minimally compliant standards still allow development in the Special Flood Hazard Area, so it is possible to cut off access to critical floodplain storage, resulting in increases to the base flood elevations and flood velocities to other properties.

~~The legislative changes to ERAF funding propose to address the limitations of the National Flood Insurance Program by providing an incentive: Under ERAF, the Town may receive an increased state match for federally declared losses, if the town adopts flood regulations that are more aggressive than the minimum standards of the National Flood Insurance Program. These above-and-beyond standards include prohibiting most forms of new development in the river corridor, prohibiting most forms of new development in the Special Flood Hazard Area, and requiring structures that are more than 50% damaged to be elevated to at least one foot above the base flood elevation.~~

~~This year, the Agency of Natural Resources is releasing a statewide map of river corridors. The Hardwick Planning Commission should review this data and develop a comprehensive flood resilience plan that establishes effective strategies for managing and minimizing flood-related risks, including the protection of critical floodplains, river corridors, and upland forested areas that attenuate flood flows.~~

#### Critical Facilities

In the event either critical facility is repaired or improved at an expense that represents more than 50% of the value of the structure, the facility should be floodproofed or elevated to the 500 year flood elevations.

#### Local Emergency Operations Plan

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

#### Flood Resilience Goals:

- ~~• Mitigate Hardwick's flood hazards.~~
- ~~• Minimize the risk exposure and associated expense to Hardwick residents.~~
- Ensure that the Town and its facilities are prepared to meet the demands of the next flood.
- Ensure that the Town can receive the maximum outside assistance in the event of the next federally declared disaster.

#### Flood Resilience Strategies:

- ~~• Identify and protect Hardwick's natural flood protection assets, including floodplains, river corridors, land adjacent to streams, wetlands, and upland forested areas.~~
- Adopt flood hazard regulations that, at a minimum, ensure eligibility for flood insurance through the National Flood Insurance Program.
- ~~• Review and evaluate statewide river corridor information when it becomes available. Consider adopting regulations that will protect erosion-prone and floodwater storage areas from additional development and encroachment.~~
- Maintain and regularly update the Local Emergency Operations Plan.
- Continue to meet the VTrans Road and Bridge standards. Participate in regional road foreman trainings and Transportation Advisory Committee meetings to stay abreast of flood resilience measures for the Town's roads and bridges.
- Attempt to achieve yearly updating of the Town's transportation infrastructure information in the Vermont Online Bridge and Culvert Inventory Tool.
- Identify and replace undersized and failing culverts.
- Relocate the Fire Station and HED garage out of the floodplain, or floodproof these structures to 500-year flood standards.

Hardwick Town Plan 2014

- ~~• Review and verify the findings of the two Lamoille River studies from 2009 and 2010. Consider performing similar studies on Hardwick's other main streams such as Alder Brook and Cooper Brook.~~
- ~~• Consider implementing the Next Steps from the Upper Lamoille River Stream Geomorphic Assessment Phase 2 Report Greensboro and Hardwick, Vermont February 2009 study (see Appendix B).~~
- ~~• Consider implementing the two projects recommended in the Lamoille River Corridor Plan Hardwick to Johnson Lamoille County, Vermont December 15, 2010 (see Appendix B).~~

## Section 2: Living and Working in the Heart of Vermont

### A. HOUSING

#### Safe housing

A basic responsibility of any local government is the safety of its residents. This generally translates into services such as police, fire and rescue, but also explains why many communities adopt regulations such as building codes, septic regulations, health codes, and zoning bylaws. Each community decides how much oversight they will provide and how much is left to the property owners to determine for themselves.

In Hardwick, the Select Board only enforces the state health codes through the appointment of a Health Officer. The health codes apply to commercial and rental properties. In July 2007, the State of Vermont began having complete authority over all septic permits. Other basic standards that the town has adopted include flood hazard regulations (to require any housing in the flood hazard area to be safe for occupants), subdivision regulations (to require private roads to be wide enough to accommodate emergency vehicles), zoning regulations (to require driveways and buildings to be serviceable by emergency vehicles), and fire codes (to enforce additional fire code requirements on rental units). Hardwick has adopted most of these regulations ~~as well~~ except for additional fire codes that exceed the state requirements.

#### Housing demographics

A typical goal for housing is to have a variety of housing types available in Town. This is important because peoples housing needs change over time: renting when someone is younger; owning homes as one gets the resources to afford it; and downsizing homes as individuals move into retirement. Having a variety of housing options in town means residents can remain in town as their housing needs change.

Single-family units are the predominate form of housing in Hardwick. A breakdown of housing from the Grand List records from 2012 is as follows:

- 644 residential homes on 6 or less acres
- 243 residential homes on 6+ acres
- 73 mobile homes without land
- 134 mobile homes with land
- 13 vacation homes on 6 or less acres
- 35 vacation homes on 6+ acres
- 26 operating farms
- 11 commercial apartments

According to the 2010 Census, there were 1,423 housing units in Hardwick. Of these units, 1,239 are occupied, with 909 being owner-occupied, and 330 renter occupied.

The most recent American Community Survey 5-Year Estimates (2008-2012) shows a lower housing unit count of 1,335, probably because it is based on a sampling averaged over multiple years. Nevertheless, the ACS data does shed some light on the overall makeup of Hardwick's housing stock: Single family homes account for about 90% of Hardwick's housing stock (936 single family detached houses, 17 single family attached units, and 265 mobile homes.) The remaining are duplexes (26) and multi-unit housing (91 units).

While the Census shows a 5.1% drop in the population over the past 10 years (see Community Profile), the number of housing units actually increased slightly by 1.1%. This cannot be attributed to an increase in vacancies, because overall vacancy rates dropped from 191 units (13.6%) in 2000 to 184 units (12.9%). And, there was a drop in seasonal housing units, from 72 units to just 60. The difference may be attributed to a decrease in average household size, from 2.61 persons in 2000 to 2.41 persons

in 2010; and a decrease in average family size, from 3.06 persons in 2000 to 2.93 persons in 2010. Hardwick's decline in household and family size is similar to Caledonia and other parts of Vermont.

There were 77 building permits issued in Hardwick in 2010, 69 permitted units in single-family buildings, and 8 permitted units in multi-unit buildings. Interestingly, Hardwick's projected population for 2011 shows another slight decrease from the 2010 Census.

## Affordable housing

Affordable housing is generally examined at two levels, regionally and personally. Regional affordability compares the median cost of housing locally with the median income regionally. In this way the town or village can see how affordable the housing is to the average person in the region. Even where housing is found to be regionally affordable, many individuals and families may have housing that personally is not affordable. This second measure examines each individual's income with their respective housing costs. Unaffordable housing is generally tied to low incomes but this is not always the case. A family with a \$100,000 a year income who spends more than \$2,500 per month on mortgage and taxes would not have affordable housing. This will be discussed further below.

### Regional Affordability

The Department of Housing and Community Affairs housing policy states that housing is regionally affordable when the costs required for housing (mortgage plus taxes) are no more than 30% of the income for a household earning 80% of the median county income. The basic premise behind this is that when families pay more than 30% of their income on housing, they don't have enough money left over to pay for basic necessities, such as food, clothing, and transportation. The affordability threshold for Caledonia County is \$902 per month. (Caledonia County's affordability threshold is calculated as follows: \$44,435 is the county median household income, according to American Community Survey Estimates adjusted to 2012 inflation; 35,548 is the 80% figure; \$10,664 is 30% of the 80% figure; \$889 is arrived at by dividing the \$10,664 by 12 months).

According to most recent American Community Survey 5-year averages (2008-2012), median monthly housing costs were \$1,114 for those with a mortgage and \$523 for those without a mortgage. The median housing cost for those with a mortgage was \$225 above the regional affordability threshold, which means that household earning \$35,548 could not afford the median mortgage expense in the Town of Hardwick. Unlike mortgages, rents in Hardwick were considered affordable. The median gross rent in Hardwick was \$523. However, before we simply assume that rental housing is affordable in Hardwick, it should be noted that more than 50% of renters in Hardwick are paying more than 30% of their household incomes on housing.

Affordable housing continues to be a challenge for Vermonters throughout the region and the state. The Vermont Housing Finance Agency reports that a persistently high proportion of Vermonters pay too much for housing. Forty-seven percent of renters and 38% of owners with mortgages pay more than 30% of their income for housing costs - which has helped Vermont to be ranked as the 17th worst state in the nation for housing. Hardwick's affordable housing challenges are the same as those elsewhere in the state: stagnating incomes, largely due to a lingering recession, and aging housing stock, particularly among rental units.

### Purchasing a home

Another source of information on housing costs is to review sales of homes. The figures on the table below reflect actual sale prices of houses in Hardwick over a five-year period.

**Table 8. Median sale prices, Hardwick 2007-2012 (# of valid sales)\***

	2007	2008	2009	2010	2011	2012
House <6 ac	\$103,000 (21)	\$112,000 (17)	\$70,000 (29)	\$114,286 (23)	\$83,125 (14)	\$83,000 (23)
House 6+ ac	\$190,000 (5)	\$227,500 (3)	\$91,750 (6)	\$159,750 (6)	\$172,500 (6)	\$185,000 (7)
Open land	\$1,856/ac (4)	\$1,894/ac (6)	n/a	\$2,100/ac (1)	n/a	\$803/ac (1)

Source: Property Transfer Records, Vermont Dept. of Taxes

The impact on the 2008 recession appears to have had a lingering effect on Hardwick property sales. Using the rough estimate that households can afford a house that is three times their yearly income, someone earning the median regional income could afford a home up to \$135,360 while the 80% income figure is 108,288. According to Table 6, houses (with less than six acres) on the market in 2011 and 2012 were affordable to individuals earning 80% of median.

### Special needs housing

Within every community are individuals or families with special housing needs. The elderly and families with children in poverty are examples of groups with special needs that are found in most communities. The disabled or infirmed may also require special arrangements. A final category of special needs housing is group quarters or institutional care. Living arrangements such as college dormitories, nursing homes, group homes, and homeless shelters fall into this category.

The amount of special care required may be more or less depending on the situation. Some individuals need only special construction (such as handicapped accessibility), while others need assisted living arrangements (visiting nurses) or full institutional care.

Listed below are groups with special needs which are found in Hardwick and an evaluation of how well their needs are being met. Generalizations are made throughout this section based on age and they are not intended to be derogatory in any manner. With each generation, individuals are staying healthier longer and can live independently much later in life. But, in general, taking care of oneself and one's home gets significantly more difficult as one gets older especially if someone loses a spouse.

- **Seniors living alone:** According to the 2010 Census there were 143 seniors living alone in Hardwick. This group is important for social reasons as being retired and living alone in northern Vermont can be hard. In many cases, opportunities to rent apartments in senior housing are desired. Hardwick currently has no senior housing available (Level IV- senior living- no assistance provided). While there are no Level IV facilities, there are private senior housing options including the Bemis Block (14 units), Highland Hills Apartments (14 units), and Maple Street Apartments (16 units).
- **Seniors 70-85:** Most seniors between 70 and 85 continue to live independently, but many require some assistance especially as they get older. These may be situations where seniors have difficulty driving or require a visiting nurse periodically. Residents are typically still active and take care of themselves and their apartments. In Hardwick there were 219 seniors in this age group and there are no Level III living arrangements available (Level III housing has 24 hour assisted living).
- **Seniors 85 and over:** Beyond age 85, seniors increasingly need more intensive care. In the most serious cases, full institutional care is required. There are 44 seniors in Hardwick over 85. Hardwick has no Level II or Level I housing. These types of living arrangements are also known as nursing homes or convalescent homes. Residents generally are unable to live on their own due to physical or mental difficulties. The construction of assisted living facilities or a nursing home would be of benefit to the Hardwick community and to its seniors, allowing them to remain living near their homes.
- **65 and over with a disability.** According to the latest American Community Survey 5-Year Averages,



there were 114 individuals in Hardwick identified as having a disability. In addition to social services to address some of these needs, there are wheelchair accessible units in the Bemis Block, Highland Hills Apartments and Maple Street Apartments. Although not exclusively for seniors, Hardwick House Partnership (South Main Street) and Hardwick Family Housing (Cherry Street) have wheelchair accessible units available as well.

- 18 to 64 with a disability. There were 182 individuals in Hardwick with some kind of disability. Depending on the severity of the limitation, human services, transportation services, or special construction (handicapped accessibility) may be required. Social services are available in Hardwick although special living situations for those in serious conditions do not exist. Wheelchair accessibility is available to residents at the Hardwick House Partnership (South Main Street) and Hardwick Family Housing (Cherry Street).
- Families in poverty. According to latest ACS estimates, 10.6% of Hardwick families have been living below the poverty level within the past 12 months. For families with children under the age of 18, this percentage jumps to 15.5%. These are groups with housing needs that are difficult to meet. Federal programs provide housing assistance under “Section-8” but there is limited availability for those under 65 in Hardwick. Bemis Block has 14 approved Section 8 units (seniors only), Maple Street has 16 approved units (seniors only); Hardwick Family Housing (Cherry Street) has 8 units of Section 8 housing designed for families (2 to 3 bedroom units). Section 8 housing is in many cases the housing of last resort for some families before becoming homeless. The housing and support programs are necessary to help families keep a roof over their heads while they get their lives back in order.

## Fair housing

Federal and state fair housing laws are intended to prevent discrimination in how housing is sold, rented, appraised, financed, and advertised. These laws protect people of all races, religions, sexual orientation, people with disabilities, the elderly, families with children, and persons receiving public assistance. These laws also protect all homeowners and residents from being victimized by destructive practices such as steering potential residents to only certain communities, neighborhoods, or developments.

Fair housing laws mainly regulate the actions of property owners, landlords, lenders, realtors, and appraisers. Municipalities, however, also must comply. Municipal responsibilities are derived from four general areas: regulatory activities, provision of services, provision of subsidies, and proprietary activities.

Hardwick has few areas of concern at this time. The zoning and subdivision regulations have been written to allow for multifamily housing, mobile home parks and other housing options to ensure affordable housing options are available to residents. The zoning district lines and regulations have not been written to isolate or single out any group and the bylaws are administered and enforced without bias.

Other than emergency services, education, and highways, Hardwick does not provide services to residents and does not provide subsidies or special services to residents. Hardwick also does not get involved in the buying and selling of real estate as a few large communities do. Hardwick therefore needs only to be vigilant with the provision of those few services to ensure they are fairly administered (e.g. not plowing roads with minorities as frequently as other roads in town could violate fair housing laws among others).

A municipality has fair housing responsibilities regardless of whether or not the federal or state government has funded the activity that is a basis for a complaint. A fair housing violation does not require intent: A violation can be found even if only a discriminatory impact or burden results. For this reason, Hardwick must take care in establishing processes and procedures, provide education and training to employees, and reviewing any regulations that are developed in the future to ensure protected groups are not directly or indirectly discriminated against.

## Goals, Policies, & Recommendations

### OVERALL GOAL

- For Hardwick to have safe and affordable housing available in a variety of types for all incomes, ages, and for those with special needs.

### GOALS

#### Safe housing

- ~~All housing should be safe for the occupants and should not present a hazard for the public at large.~~

#### Variety of types

- ~~Hardwick should have a variety of housing to meet the various needs of the residents of town including vacation homes, multifamily housing, single family, two family, mobile homes, and accessory apartments.~~

#### Affordable housing

- ~~For residents of Hardwick to have the opportunity to find housing, for purchase or rent, which is affordable.~~

#### Special needs housing

- ~~To ensure that households and individuals with special housing needs, including the elderly, handicapped, low-income households are able to attain suitable and affordable housing.~~

#### Fair housing

- ~~That housing in Hardwick is available to all individuals and families regardless of race, gender, sexual orientation, age, marital status, religion, color, national origin, disability, having children, or receiving public assistance.~~

### POLICIES

#### Safe housing

- Residential development should not be permitted in the flood hazard area and existing housing in the floodplain should be flood-proofed for the safety of the residents and the town as a whole.

- ~~All rental housing must meet state fire codes as appropriate.~~

#### Variety of types

- ~~Vacation homes are encouraged.~~

- Accessory apartments are encouraged as they provide needed income for the homeowner and needed small apartments for residents living alone.
- Multifamily housing is encouraged in our village centers.

#### Affordable housing

- ~~Sites for manufactured homes are allowed in locations similar to those generally used for single-family conventional dwellings.~~

- Affordable housing should minimize long-term living costs through high quality design, efficient construction, energy efficiency, and proximity to employment.
- Hardwick encourages land use patterns which are inherently more affordable by nature of cost of efficiencies associated with construction (e.g. shorter access roads, smaller lots, proximity to utilities).

#### Special needs housing

- Hardwick supports efforts to assist elderly and disabled residents who wish to remain in their homes, and to community based health care systems that enable elderly and disabled people to remain in the community.

#### Overall

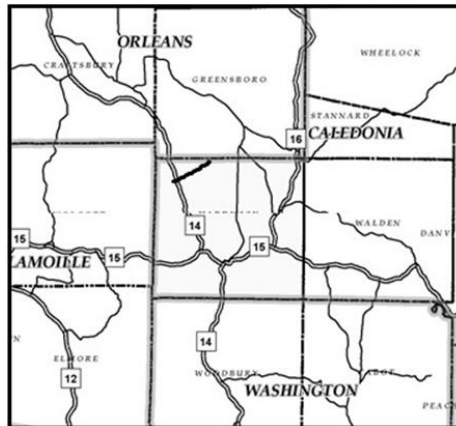
- ~~The Planning Commission should review all 'Act 250' applications for its impact on housing in the town. Where the application is determined to not conform to this chapter or any goal or policy, the Planning Commission or Select Board should participate in the 'Act 250' process in order to ensure the concerns of the town are addressed.~~

## B. ECONOMIC DEVELOPMENT

Initially, agriculture, forestry, and granite dominated the community's economy but over the past 30 years the economy has increasingly relied on its residents driving to work in other communities. The resources still exist for agriculture and forestry to be an important component of the community into the future but trends in national and regional economics have forced these traditional types of operations to change or be forced out of business. With change, however, comes opportunity. A recent study commissioned by Northeastern Vermont Development Association notes that value-added agricultural processing in the Northeast Kingdom has helped to create more than 700 jobs that pay upwards of \$30,000 a year. Hardwick, in many ways, has embraced this change. Over the past decade, the town has become the hub of a regional food business cluster that has been profiled in the national media, including Ben Hewitt's book *The Town That Food Saved*. In his book, Hewitt credits an agricultural renaissance for adding more than 100 jobs to the local economy.

To be prepared for future downturns in the market, Hardwick must have a diverse economic base. Manufacturing, light industry, retail, and tourism in addition to agriculture and forestry would cushion the town in the event one sector experiences a drop. Creating jobs in Hardwick would stabilize tax bases and make the town more self-reliant.

Finally, economic development is vital to Hardwick's future because residents must have opportunities to earn a livable wage and there must be opportunities to learn the skills necessary to achieve gainful employment. Town policies must encourage and support, not discourage and hamper business ventures.



### Tax statistics

Hardwick is the commercial, industrial, and service center for its surrounding towns but is not a strong regional draw at this time. In Fiscal Year 2013, a little over 14% of Sales and Use receipts from businesses in Caledonia County were generated in Hardwick. St. Johnsbury was first in the County with more than 45% of receipts and Lyndon second with more than 25%. As a percentage of the county total, Hardwick has increased from by only .01% over the past five years, yet increased dramatically from only 7.5% from Fiscal Year 2003.

Meals and rooms play a less critical role in our local economy. It is difficult to compare receipts among Caledonia County municipalities because data is suppressed.

### Number of jobs

Hardwick has 13.1% of all county employers and 9.3% of the county jobs (according to Department of Employment and Training- Unemployment Insurance UI figures 2012). According to covered employment figures of the past ten years, Hardwick's share of county-wide employment activity has grown slightly, from 11.4% of county employers and 7.2% of the county jobs in 2002. Over the past ten years Hardwick has added 23 new employment establishments and 206 new jobs, while Caledonia County gained 45 employment establishments but lost 390 jobs over the same period. Growth in jobs has actually offset overall population decline, allowing more residents to work in town. By contrast, Hardwick's share of employment activity in its labor market area (Morristown-Stowe) has only seen a more modest increase, from 8.5% of employers in 2002, to 9.4% of employers in 2012; and from 5.5% of all jobs in 2002 to 6.2% of all jobs in 2012. Over this ten year period, the Morristown-Stowe labor market area gained 129 employers and 1,659 jobs.

Wages

The average wage offered by employers in Hardwick in 2012 was \$29,790. This is 16.6% lower than the county average of \$35,709. Over the past decade, wages in Hardwick have continued to lag behind the county average, but the gap has narrowed slightly, down from 17.2% lower in 2002. Hardwick wages also lag significantly behind those of the labor market area, and have remained about 21% lower over the most recent 10-year period. Hardwick wages increased by 41% over the past 10 years, while county and labor market wages increased by 39.8% and 39% respectively.

Resident labor force

The wages information above referred to persons with jobs in Hardwick, who are not necessarily Hardwick residents. In fact, the latest American Community Survey 5-year averages indicate that only 46% of Hardwick residents work in Caledonia County. The resident labor force information looks at Hardwick residents regardless of where they work.

The Vermont Department of Labor's Labor Force and Employment report for 2012 shows that Hardwick has 1,800 individuals in the civilian labor force (age 16 and up). Of these individuals, 140 are unemployed, accounting for a 7.9% unemployment rate, which is higher than the county unemployment rate of 6.4% (non-seasonally adjusted).

Under some definitions, job centers are defined as those areas with more jobs than residents in the work force. This is not the case for Hardwick as we have 1,013 jobs and a resident work force of 1,800. Another common classification is "bedroom community" which applies to towns where greater than 60% of the workforce leaves town. While Hardwick might technically meet this definition with about 53% of the workforce leaving the county, it's hard to ignore the fact that the town has an increasing share of employment activity in the county and in the labor market area. Hardwick is therefore somewhere in between; neither a job center nor a bedroom community.

Livable wage

The median household income in Hardwick according to most recent American Community Survey statistics is \$46,335 (town-wide) and \$42,059 for the Census Designation Place (CDP, which is largely the village). By contrast, the county wide median household income was \$44,435, and the statewide figure was \$54,168. Town-wide, 10.9% of residents have an income below the poverty level - and that figure jumps to 19.5% for individuals in the CDP. Town-wide, 6.0% received income from Supplemental Social Security Income (SSI) and 5.6% received some form of Public Assistance income. By contrast, 5.7% of individuals in the Hardwick CDP received supplemental security income, and 8.1% received some form of Public Assistance income.

A livable wage is the salary required in order to meet a family's needs plus all applicable Federal and State taxes. Basic needs include food, housing, child care, transportation, healthcare, clothing, household and personal expenses, insurance, and 5% savings. The larger the family, the more income is required to fulfill those needs. Studies by the Peace and Justice Center in 1998 set the formulas with income figures, and these figures are now updated every odd numbered year by the State of Vermont Joint Fiscal Office. In 2011 the figures show a single person in a rural area needs to earn \$15.23 per hour (\$31,678 per year) to meet basic needs. This increases to \$76,461 for a family with two wage earners and two children. Note that these income figures assume health care is paid by the employer. Average wages offered by employers in Hardwick in 2012 was \$29,790 - well below the livable wage for a family with one wage earner but sufficient for dual income families without children.

Table 9. Average livable wage figures for various household sizes.

Family Unit	Livable Wage
Two adults, no children	\$11.79/hr each wage earner (\$ 49,046 household income/year)
Single person	\$15.23 /hr (\$ 31,678 /year)
1 Parent, 1 child	\$23.23 /hr (\$48,318 /year)
1 Parent, 2 children	\$28.36 /hr (\$58,989 /year)
2 Parents, 2 children - 1 wage earner	\$28.78 /hr (\$59,862 /year)
2 Parents, 2 children - 2 wage earners	\$18.38 each wage earner/hr (\$76,461 household income/year)

Source: Basic Needs Report 2011, Vermont Joint Fiscal Office, January 2011 Study

Occupation and industry

Most residents of Hardwick were employed in private wage or salary positions (72%) while the remaining residents were employed by the government (16.6%) or self-employed (10.5%).

The tables below show the occupation and industry of residents of Hardwick in the most recent American Community Survey 5-Year averages. A manager of a construction company, for example has as his/her occupation ‘management, professional and related occupations’ while the industry is ‘construction’. As can be seen, most residents worked in the ‘education, health, and social services’, ‘retail trade’ and ‘construction’ industries. Most of the occupations were in ‘sales and office occupations’ and ‘management, service occupations’ although there was a relatively even distribution of occupations.

Tables 10 and 11. Occupations and industries of residents of Hardwick.

Occupation	Percentage
Management, business, science and arts occupations	33.5%
Service occupations	19.6%
Sales and office occupations	18.7%
Natural Resources, Construction, and maintenance occupations	15.5%
Production, transportation and materials moving	12.7%

Industry	Percentage
Agriculture, forestry, fisheries, hunting, mining	1.9%
Construction	11.8%
Manufacturing	8.2%
Wholesale trade	2.3%
Retail trade	13.1%
Transportation, warehousing, utilities	4.8%
Finance, insurance, and real estate	3.9%
Professional, scientific, management, admin.	3.3%
Education, health, and social services	33.8%
Arts, entertainment and recreation services	1.9%
Other services (except public administration)	8.0%
Public administration	7.0%

Source: American Community Survey 5-Year Averages, 2008-2012

**Sectors of Local Economy**

These figures and classifications are based upon the 2012 State of Vermont, Department of Labor, Economic & Labor Market Information- Unemployment Insurance (UI) figures. Not everyone pays into this program therefore some sectors may be underrepresented such as self-employed persons including many farms. In some cases a sector may be over represented if a company is based in

Hardwick but employees are located in other parts of the state. Though flawed, these figures do provide a picture of our local economy and its sectors. In total, the UI figures indicate Hardwick has 138 businesses (establishments) that employ 1,013 persons.

#### Trade and transportation

The largest sector of Hardwick's economy, based on employment, is trade and transportation. This sector accounts for 35 businesses, 326 jobs, and 30.0% of all wages earned in town. Within this group, retail trade accounts for a majority of the activity (25 businesses and 253 jobs). Wholesale trade (6 businesses), and transportation and warehousing (4 businesses) account for most of the rest. (Employee counts are suppressed for the two latter categories.)

#### Education

Hardwick's second largest sector is public education which employs 124 persons. This group is almost exclusively employees of the elementary school and Hazen Union. This is one of the few employment sectors of our economy that is in decline; employment has decreased by 15.6% in the past five years.

#### Construction

The construction industries account for 15 percent of all private employers (19 in all) in town and employ 105 persons. Fourteen of these businesses are specialty trade contractors (plumbers, electricians, etc.) who employ 86 of the 99 persons in this sector.

#### Public administration

Persons employed by local governmental bodies, including the Town of Hardwick, are the fourth largest sector. This includes the Town Clerk's and Manager's Office (10 employees) as well as the police department (10 employees). It does not include employees of the road crew or Hardwick Electric Department though. A majority of this sector is "administration of human services" which includes administrators of the Supervisory Union School District and employees of public health clinics. There are a total of 97 persons in local public administration.

#### Private education and health services

Ten of the 14 businesses in the sector and nearly all of the employees in this sector are in the health care field. The 92 employees in this area earn some of the highest wages in town averaging \$37,850. Only local government utilities (Hardwick Electric Department) and federal postal carriers had higher average wages.

#### Natural resources and mining

Historically this sector built Hardwick and made it what it is today. It continues to play a vital role in that it provides the resources for our manufacturing and construction sectors and provides the beauty and scenery that our hospitality sector needs to thrive. This sector employs only 44 persons.

#### Leisure and hospitality

Leisure and hospitality now accounts for 9 establishments employing 44 persons. Employment activity has more than doubled over the past five years, which is a reversal of the long-term decline from previous periods.

#### Other sectors

Other sectors include financial activities, which includes finance, insurance, and real estate (eight employers, 25 employees); professional and business services (15 employers and 37 employees), and public utilities (2 employers, 13 employees).

#### Manufacturing

Manufacturing is always a big topic for discussion in economic development but it has, for many years, played a diminishing role in our economy. Five years ago, there were only 4 businesses and 13 jobs, down from 9 businesses employing 58 persons in manufacturing 10 years prior. In recent years,

however, Hardwick's manufacturing sector has experienced something of a resurgence. As of 2012, there were 10 establishments employing 36 persons. Seven of these establishments were non-durable goods, six of which related to food and beverage processing.

### Hardwick's strengths

The foundation of Hardwick's economy is from its natural resources. Historically, agriculture, forestry, and granite all powered the local economy; sending milk, lumber, and granite into the villages for processing and shipping to other parts of the country. Today we are less dependent on these but they still establish a base of raw materials for value added businesses. Success in these areas is not easy. Many towns have experienced significant declines in agriculture and forestry. Hardwick continues to encourage innovation, diversification, and education. A solid technical center program (see education chapter) provides a young well-trained work force for careers in these areas.

To support this foundation Hardwick has the infrastructure and much of the labor force necessary for economic development are already in place. Hardwick has an industrial park that is equipped with municipal water, sewer, roads and 3-phase power. We also have a sewage treatment plant with excess capacity to handle new growth. While this park is almost full, the town is already looking for a location for a second industrial park. The Village areas have broadband internet access from multiple venues (see Information Technology and Telecommunications chapter).

The Hardwick area has strength in numbers when it comes to value added agricultural businesses. A soy processing and a whey processing facility (both located in the industrial park, a seed production business in neighboring Wolcott, and three cheese producers are among a few of the bigger businesses. In 2011, the nonprofit Vermont Food Venture Center opened for business in the industrial park. This 15,000 sq. ft. multi-purpose food processing incubator is managed and operated by the Center for an Agricultural Economy, a nonprofit whose mission is to build a regenerative, locally based, healthy food system by engaging the greater Hardwick community through collaboration opportunities, educational outreach and providing infrastructure. Equipped with coolers, freezers, shared kitchens, a bakery, hot pack, and minimal processing area, the VFVC has already assisted dozens of entrepreneurs, resulting in the start-up of 25 new businesses. The facility also hosts a cheese production cell for aspiring cheese makers in this facility.

To assist start-up ventures, the Town has a revolving loan fund with approximately \$607,000 loans currently outstanding with 13 local businesses. As businesses repay their loans, the money is loaned out to new ventures. To date this fund has helped create and/or retain at least 60 jobs in Hardwick.

The Hardwick Area Chamber of Commerce is active in marketing the region. It has membership with over 100 members and holds a number of functions during each year to promote local businesses. They also host a web site, and produce brochures and advertising to promote the Hardwick area.

Hardwick's location at the intersection of major east-west and north-south state highways makes it the hub for at least seven surrounding towns. The town provides goods and services to many people beyond the borders of Hardwick.

Hardwick has many recreational assets which can be used to support a greater tourism and hospitality sector. Construction on the Lamoille Valley Rail Trail is just now beginning, and the village of Hardwick is at the transition point where the almost level river valley starts to climb over the hills to the Connecticut River valley. This makes Hardwick an excellent location for starting or ending a trip whether it is for a relaxed ride down the valley or a challenging ride over the hill. Hardwick also offers hunting, fishing, hiking and cross-country ski trails, and numerous intersecting snowmobile trails. There is also an active ATV organization who is working with the Town and private land owners to create a network of ATV trails. The Hardwick Trails were created in 2003 and recently held a public event to celebrate 10 years of offering Hardwick area residents and visitors a 10k four-season trail system for non-motorized use. Supported by Hardwick's taxpayers and by active grant writing and fundraising by the Hardwick Trails Committee, the Trails offer hiking, mountain biking, cross-country skiing and snowshoeing, cross several hundred acres of rolling terrain shared by Hazen Union, Hardwick Electric, the Town of Hardwick and Wendall & Bev Shepard. Maintained by a part-time caretaker and a group of volunteers, the trails are mowed in the summer and groomed for skiing in the winter. Skis and snowshoes are available for lending.

Several events and programs are offered throughout the year, including the annual Pumpkin Walk, moonlight snowshoe tours, wildlife and wildflower identification walks, bird-watching walks, and a children's ski program, all at no cost to users.

### Challenges to Hardwick's economy

Hardwick's location at the intersection of many state highways makes it an excellent location for regional markets. Unfortunately the lack of interstates and US Routes means Hardwick will need to work harder to bring people to the town from beyond the region. The Hardwick Area Chamber of Commerce is currently working on marketing and branding to get the word out about Hardwick and the surrounding towns. The lack of interstates or easy access to them is also a challenge for manufacturing especially in times of high fuel prices.

Although Hardwick has long held a reputation as an older industrial town, there is a significant opportunity to re-establish the community as a destination spot for industry, recreation, and tourism. And, the three forms of development need not be seen as competing or even conflicting uses. To achieve this, Hardwick will need to work hard to change our reputation to an up-and-coming place to do business. Marketing by the Chamber and a new town web site will go a long way to achieving this objective but other efforts by the Town and other stakeholders will be needed.

Hardwick needs a more proactive approach to economic development. Hardwick should work with business owners and the Chamber to develop a clear set of plans and policies so that everyone is working towards the same goals. For instance, if the town wants Hardwick to be a tourist destination then certain policies should be adopted to improve the appearance of the downtown and our highways. If our industrial park is intended to support value added agriculture then policies need to be in place to support farms. If the town wants to maximize the benefits of the rail trail then signage, parking, bike racks, and sidewalks are necessary to make visitors feel welcome. We need a plan to get them from the trail to various points in the downtown. The town has many assets and opportunities which can be used to have a positive influence on economic development.

Hardwick is well established with respect to utilities such as sewer and electricity although some issues with the water system remain. This is not true for twenty-first century technologies though. Broadband access for the internet is available in the villages and some rural locations but this technology needs to be widely available and from a variety of sources (DSL, Cable, WISP). Cell phone and other wireless services are, for the most part, not available. These are discussed further in the Telecommunications and Information Technology chapter. When it comes to attracting businesses to the area, we cannot be perceived as a technological backwater.

Finally, Hardwick has a need for additional industrial space. The industrial park - which is occupied exclusively by agriculture and value-added processing enterprises -- is nearly full. The area directly across from the park has accommodated some value-added processing activity as well. Both areas on either side of Route 15 have some capacity for development, albeit limited. For the short- to medium-term, the production area that encompasses both sides of Route 15 may be able to accommodate up to six structures, assuming that build-out of the industrial area follows the typical footprint of an agricultural processor (approximately 6,000 to 10,000 sq. ft.). A typical value-added producer needs about 1,000 to 3,000 sq. ft. of space. Storage is usually the greatest need - about three times that of production space. Until now, smaller startups have often been able to sublet or co-reside with other producers, which means that more than six small producers may be able to locate to Hardwick. Other businesses that complement the existing cluster of value-added producers would be helpful, such as a small engine repair shop for repairing and refurbishing food production equipment.

The abovementioned additions, however, will only satisfy the interim needs for Hardwick's manufacturing cluster. What is needed is additional - preferably neighboring or nearby -- land that will accommodate a corporate campus for Hardwick's agricultural and value-added food producers. This production area must leverage the community's unique brand in order to become successful and sustainable. While Hardwick may lack some of the traditional industrial development enticements (such as Interstate highway access) it offers a compelling premise of sustainability and grass-roots entrepreneurship. For example, the synergy that has already developed between the small and mid-sized businesses can continue to lead to shared efficiencies and resources (shipping, transport, equipment



services, co-packing, etc.). If Hardwick's value-added sector is expanded, this synergy must be maintained in order to ensure Hardwick's critical edge as a destination spot for entrepreneurs.

Maintaining a light environmental footprint is also critical to maintaining Hardwick's "industrial" edge. Industrial development must not compromise or fragment Hardwick's vast resources of productive farmland or impede access to passive recreation resources, such as hiking or cycling. It is possible to accommodate all three uses in a way that makes Hardwick an outstanding example of sustainable economic development. Future additions to the Hardwick economy could include test gardens, community kitchens, and even a visitor/retail component, such as production viewing area or tasting center. If appropriately sited and attractively landscaped, Hardwick's agricultural processing campus could incorporate access to hiking and recreation, and could itself become a destination spot for agri-tourism. As manufacturing plays an increasing role in our overall economy, it will have a broad impact on the overall economy. Manufacturing not only employs persons at the plant but also provides markets for farmers. If industrial expansion is executed thoughtfully, it will be mutually beneficial to the town's farmland, tourism, and recreational resources.

### Vision for the Hardwick's Future

In 2012, the Hardwick Planning Commission conducted a land use evaluation that was largely focused on finding land that would be suitable for future industrial development. Central to this evaluation was a GIS-based site suitability analysis, as well as an exploration of the kinds of businesses that were commonly deemed to be important for strengthening Hardwick's mix of businesses, while also achieving the overall goals of the town plan (i.e. recreation, hospitality, tourism, value-added processing). What resulted are some critical commonalities that could allow the community to support such a diverse array of economic opportunities:

- **Industrial development in Hardwick is strictly an issue of scale - in other words, it embodies what is commonly characterized as "light industry."** Hardwick's existing industrial uses, for example are generally about 10,000 sq. ft. Moreover, more than 60% of Hardwick's employers (according to latest Bureau of Labor Statistics) are small and employ only one to four employees. Size and siting of such uses is critical to achieving a balance with nature and complementing and protecting Hardwick's rural resources and rural beauty. Large-scale, intense industrial development that entails extensive impervious surface coverages (leading to run-off), traffic congestion, smoke, offensive odors, fragmentation or conversion of farmland or recreation land is not appropriate for Hardwick.
- **Siting and screening is essential in siting industrial uses.** Even though the site suitability analysis identified some areas that may be able to accommodate industrial development, siting, screening, and scale must be complementary of its surrounding uses. Commercial and light industrial enterprises near East Hardwick, for example, must complement the small village look and feel.
- **Maintaining the relationship around Hardwick's traditional centers of development is important.** Commercial and light industrial development must not be strung along roadways leading to sprawl. Rather such uses should be sited as close to development cores as is feasible, such as within a two- to three-mile radius. Siting such uses closer to the downtown will be advantageous to downtown residents, who may benefit from living closer to new employment opportunities.
- **Home-Based Enterprises:** The majority of Hardwick's businesses are small, and many are likely to be located in a residence. Home based enterprises is an important source of economic opportunity, and it may create opportunities for adaptive reuse of historic and accessory structures that would otherwise lapse into disrepair and neglect (such as old barns that are no longer part of a working farm). The Town recognizes the importance of home-based enterprises and encourages such activity as appropriate.

## Goals, Policies, and Recommendations

Economic development is vital to the future of Hardwick. We have, so far, avoided the fate of becoming another bedroom community. Hardwick needs to improve businesses and employment to ensure our residents have good jobs close to home. People who work near home will shop near home and that will keep our money local. Although the town hasn't added a lot of new jobs over the past ten years, those businesses that exist are doing better and employees are earning much better wages.

### GOALS

- For Hardwick to have a diverse and resilient economy based on agriculture, small business, and light industry that is compatible with Hardwick's scenic landscape and will raise income levels and provide employment for Hardwick residents.
- ~~For Hardwick to be a regional center for commercial activity and employment.~~

The Town has developed the following policies in order to encourage and support local economic development.

### POLICIES

- ~~The town supports initiatives which will make farming and forestry more economically viable into the future.~~
- ~~The town supports industries which take advantage of our local resources to produce value added products.~~
- ~~The town encourages the development of recreationally based businesses to bring visitors to Hardwick.~~
- ~~Hardwick supports the efforts of the Hardwick Area Chamber of Commerce to market and promote area businesses.~~
- ~~Hardwick supports the "buy local" efforts of the Chamber and town.~~
- ~~The development of appropriate industries and businesses, which utilize the skills of the local labor force, are encouraged.~~
- ~~The town supports proposals which will provide workforce training to improve opportunities for residents in new and existing businesses.~~
- ~~The town supports existing and proposed businesses, which provide jobs at a livable wage.~~
- Economic development at the expense of the environment is not encouraged. Businesses and industries shall not degrade or endanger air and water resources.
- Industries that extract renewable resources, such as timber, must do so in a sustainable manner.
- Home based businesses shall be in scale with their surroundings and context - and as an accessory to the primary residential use.
- Home-based business shall not create impacts that are uncharacteristic of the areas in which they are located.

The actions and recommendations are intended to provide opportunities for economic development.

### ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

- The Planning Commission should pursue funding, perhaps through the municipal planning grant program, to conduct an economic assessment of Hardwick and to develop a strategy for moving forward.
- The Town Manager, Planning Commission, and Select Board should investigate Downtown Designation for the village area.
- ~~The town should work with NVDA to host small business development workshops in town.~~
- The Town Manager and Planning Commission should pursue funding to identify a new location for an industrial park.

Hardwick Town Plan 2014

- ~~• The Planning Commission should review all 'Act 250' permit applications within the Town to determine their impact on the economic development of the Town. Where the application is determined to not conform to this chapter or any goal or policy, the Planning Commission should participate in the 'Act 250' process in order to ensure the concerns of the town are addressed. Where an application conforms to this chapter, the Planning Commission should participate in the Act 250 process to attempt to ensure the process is as smooth as possible for the applicant.~~

## Section 3: Servicing the Residents, Visitors, and Businesses of Hardwick

### A. PUBLIC AND PRIVATE FACILITIES & SERVICES

This chapter includes a wide variety of governmental and private services for residents and businesses.

#### Hardwick's government

Hardwick operates under a Town Manager form of government. The manager reports to the Select Board made up of five elected citizens. The manager is responsible for the day to day operations of the Town and prepares the annual budget for approval by the Select Board and also functions as the Police Commissioner. Staff employed by the Town includes a police chief, police officers, public works foreman and highway crew, water and wastewater systems operator, administrative staff persons and a half time zoning administrator.

There are a number of boards, committees, and positions appointed by the Select Board. These include the Planning Commission/Development Review Board, Hardwick's representative to the Northeastern Vermont Development Association (NVDA), the Hardwick Electric Department Board of Commissioners, and the Hardwick Recreation Committee. In addition to the Select Board, Town Clerk, and Treasurer, there are also more than twenty elected positions including three Listers, three auditors, two constables, four cemetery commissioners, and seven library trustees.

Adoption of budgets and election of officials are done at the annual Town Meeting, held the first Tuesday in March.

Prior to 1988, Hardwick had both a Village and a Town government. In 1988, they merged into one entity and a new Town charter was written and approved by the Vermont Legislature.

#### Water systems

The Town of Hardwick operates a water system that serves 645 customers in the main business and residential district of Hardwick including the former Village and the industrial park. The Hardwick Water Department is funded entirely by user fees and receives no money from the Town General Fund.

The system is supplied by two high yield sand and gravel wells located on the south side of Route 15 near the Hardwick Industrial Park. The water is pumped to a covered concrete reservoir on Bridgman Hill with a capacity of 500,000 gallons. The water mains are fed by gravity from the reservoir. These wells have provided an abundant supply of pure water to residents since the 1940s and should meet the system's current and projected needs. While the wells are adequate, the reservoir is approximately 300,000 gallons undersized and plans are being developed to construct a new 300,000 gallon reservoir to ensure adequate water supply during times of high use, such as fires, line breaks, or flushing operations. The cost of this project will be approximately \$1.8 million. The Town approved the bond for the water system improvements at the 2013 Town Meeting. The bond will be repaid by the users of the water systems and will likely lead to increased water rates. Since 2008, the Town has installed a new 8 inch water main on West Church Street, rebuilt the river connection from Cottage Street to Wolcott Street, installed a new 12 inch main on South Main Street and replaced smaller water lines on Kellogg and Winter Streets. However, the distribution system is still in need of upgrades. There remain undersized water lines and low water pressure areas within the system in a 2012 hydraulic analysis prepared by Aldrich and Elliot under contract to the Town.

The two main water wells are situated in an area of intensive use, being adjacent to a major road (Wolcott Street), the industrial park, and near underground storage tanks, leading to concern that

the wells may eventually be contaminated. To attempt to maintain the current water quality of the wells, the Town Manager's Office developed the Wellhead Protection Plan for the Town of Hardwick Water System. The Source Protection Plan (SPP), as it is now known, is updated regularly relative to State regulations. The last update of the plan was in June 2012. The SPP lists potential sources of contamination, discusses managing existing risks, managing to minimize future risks, and states a contingency plan in case of an emergency. The SPP establishes a protection area where growth and land use need to be monitored and controlled.

To ensure a continuous supply of clean water, a backup chlorination system was installed at the well site in 1998. In 2006 a generator was added to allow the pumps to continue to operate during an emergency. In 2012 and 2013, the control systems of both well pumps were updated to provide more efficient and reliable operations.

The East Hardwick Fire District operates a water system supplying 106 customers in the Village of East Hardwick. User fees fund the system. The system is fed by gravity from a well field and is stored in a concrete reservoir above the village for delivery to system users. There are several hydrants in the Village area, maintained by the Fire District.

## Sewage and septic systems

The Hardwick Sewer Department serves 583 customers, covering the same area as the water lines. The Hardwick Sewer Department, like the Water Department, is funded entirely by user fees and receives no money from the Town General Fund. The wastewater treatment facility is an aerated lagoon system built in 1980. It has a rated capacity of 371,000 gallons of domestic sewage per day. The town conducted a 20-year review of the facility in 2001. While still in good shape, several upgrades to equipment were required. These upgrades will extend the life of the facility and will also make it more efficient. One requirement was the installation of a phosphorous removal system which was completed in 2007. The wastewater treatment facility is set for relicensing in 2014.

Tightening of water quality standards at the state level could require further capital improvements at the facility and throughout the storm drainage system in the village area. Currently, about 1/3 of the facility's capacity is available for new users. This capacity is sufficient to accommodate some residential and industrial growth but major growth in population or a heavy industrial user could require expansion of the existing facility. The maximum capacity of the sewer system, the amount of waste that can be received and treated, affects growth by limiting the number of homes and businesses that can hook onto the system.

One significant area of concern is the age of the wastewater collection system. Some of the sewer lines date back 100 years or more. Town staff have identified streets where sewer lines have partially collapsed, but the Town has made significant efforts to slip line and replace bad sections of piping and that effort will continue until all damaged lines have been repaired.

Outside of the village service area, all sewage is treated via individual, on-site septic systems. Permitting and enforcement of these systems is the responsibility of the State Department of Environmental Conservation Regional Office in St. Johnsbury.

## Public safety

### Police

In 1979 the Village of Hardwick decided to disband the Village police department. Equipment was turned over to the Town and a search for a new police chief was instituted. In 1980 the first chief of the Hardwick Police Department was hired and began 24-hour coverage with a staff of three officers.

In April of that year, the Town of Hardwick entered into a contract to provide police coverage for the Town of Greensboro leading to the hiring of a fifth officer. Greensboro contributed 20% of the Department budget in exchange for 48 hours of coverage per week. The Town of Greensboro

renegotiated their contract in 1991 to contribute 22-½ percent of the budget for 54 hours of service a week. In 1991 a budget was approved to add a sixth officer and a seventh was added 10 years later.

In January 2013, the Hardwick Police Department moved to its new location at 56 High Street, which is now known as the Town Public Safety Building. This building was donated to the town, and according to the terms of the donation, a portion of the building must be used for a healthcare concern. Therefore, a portion of the top floor has been reserved for the Hardwick Emergency Rescue Squad. All newly hired police officers are required by law to attend an initial 16-week Police Academy training in Pittsford. All officers attend training on a regular basis provided by the Vermont Criminal Justice Training Council. The Department's service area includes approximately 75 square miles, including the Towns of Hardwick and Greensboro. The Department is unique in Vermont in providing coverage in two counties, Caledonia and Orleans.

Police vehicles include four cruisers, two of which are 4x4 SUVs, and two of which are all-wheel drive sedans. Each of the officers is equipped with body camera recording systems and there are computer workstations in each vehicle. Additionally, one vehicle is equipped with a computerized license plate reader system that allows for an instant records check on each vehicle encountered by the Police vehicle. The Police radio systems were upgraded to digital format in 2012 including in car mobile radios, portables and the base station and included the addition of a digital radio repeater, located on West Hill.

The Department works closely with the area schools, domestic violence advocates, and the prosecutor's office for Caledonia and Orleans Counties, as well as other law-enforcement and state agencies. The Lamoille County Sheriff's Department provides holiday, weekend and afterhours dispatching services for the Hardwick Police Department.

In July of 2012 the Department became a member of the Caledonia Special Investigation Unit and assigned a Hardwick officer as a detective to the Unit. The detective is charged with investigating crimes of a sexual nature against children, adults, and the elderly. The organization of County Special Investigation Units was mandated by the Vermont Legislature.

The Department currently maintains a staff of 7 full-time Certified Police Officers, 2 part-time Police Officers, a Dispatcher/Administrative Secretary, and a Part-Time Dispatcher. The Officers consist of a Chief of Police, Sergeant, Detective, and uniformed Patrol Officers.

Rescue

The **Hardwick Emergency Rescue Squad** provides Hardwick's triage services. Founded in 1967, it was one of the first volunteer rescue organizations in the state. The first ambulance was a partially equipped hearse donated by a community member. The ambulance building on Creamery Road was built in 1981, funded by the Hardwick Hospital Association, and was expanded in 1992.

Hardwick Rescue responds to about 450 calls annually, including standby at community events and at structure fires. There are two fully equipped ambulances, Rescue 1 and the four wheel drive Rescue 2. The service area includes all of Hardwick Greensboro, Craftsbury, Wolcott, Woodbury, and Stannard, as well as parts of Walden, Elmore, West Wheelock, and East Calais.

New EMS requirements have kept the volunteers busy maintaining and advancing their skills. In 2006, due to declining volunteers, the rescue squad hired an EMT to cover some shifts. If volunteer counts continue to decline the squad may need to hire another EMT.

Fire

The "Granite Hose Company, Number 1" was formed on December 14, 1891 with approximately 18 charter members. The name was changed to the Hardwick Fire Department in the early 1900s. The present fire station on Wolcott Street was built in 1972-73.

Currently the Department has 22-25 members. Equipment includes two pumper-trucks, two tankers, and one rescue truck. In 2005 the department added a new aerial ladder truck which will be a great asset to the department and the community as a whole. Plans are underway to replace one of the pumper trucks, which is more than 30 years old.

Fire personnel carry pagers and the department is dispatched by radio.

Hydrants are well distributed throughout the area served by the village water system. If the reservoir is drawn down to a certain level, an automated system sends water from the Town wells to the reservoir, in order to maintain adequate water flows. There are several hydrants in the village area which are maintained by the Fire District. The hydrants in East Hardwick are not in service due to undersized waterlines feeding them.

The Department has been installing a dry hydrant system to give better access to water in the rural areas of town. There are currently dry hydrants on West Hill, Cobb School Road, Porter Brook Road and two at Mackville Pond. The Fire Department coordinates with the Rescue Squad and has a “jaws of life” to assist them. Hardwick participates in a Mutual Aid Agreement with other area Departments.

#### Emergency coordination

Since 2000 the United States has experienced both acts of terrorism and natural disasters that have highlighted the need for local emergency planning and coordination. There are regional and statewide efforts involving pre-disaster mitigation (to fix problems before they become disasters), Rapid Response Planning (to have a coordinated local approach during disasters), LEPC (Local Emergency Planning Committee for regional emergency planning) and CERT (a local citizen corps created to provide assistance during disasters and coordinated nationally by FEMA). It is important for Hardwick to remain involved in these efforts so that in the event a disaster occurs in town or in the county, we will be prepared to provide help.

Locally, the Select Board appoints an emergency coordinator generally the Police Chief who oversees local emergency efforts. The Town Manager is typically appointed as the Emergency Director for Hardwick to make critical decisions on behalf of the town in emergency situations. The town should support the efforts of both of these positions.

The Emergency Relief and Assistance Fund (ERAF) provides Public Assistance grants through the Federal Emergency Management Agency (FEMA) to Vermont cities and towns to repair damaged infrastructure after a presidentially declared disaster. The state typically contributes half of the required 25 percent non-federal match for approved projects. Under new ERAF rules, the Town will need to have a FEMA-approved local Hazard Mitigation Plan in order to ensure that the town receives level funding from the state as a match to FEMA funds. The plan is currently expired, but efforts are underway to update it.

## **Health services**

The Hardwick Area Health Center is part of Northern Counties Health Care, Inc., a non-profit organization administering several rural health clinics in the Northeast Kingdom. It operates a family care facility providing general health care for Hardwick and surrounding towns. Health maintenance is emphasized through a variety of educational programs and special clinics.

A major expansion and renovation of the facility was completed in 1991 as a part of the consolidation of services following the closing of the Greensboro Health Center. Northern Counties Health Care Inc. also opened a dentist office on South Main Street in 2001. In 2013, the Health Center was relocated to Slapp Hill.

Medical services are provided by four full time physicians, a nurse practitioner, and additional nurses, facilitated by office staff. Medical services are available for emergency calls 24 hours a day, reachable through the Center’s answering service. Caledonia Home Health also offers services at the Health Center.

Hardwick is also fortunate to have two dental offices- the Hardwick Dental Group and Northern Counties Dental Center. There are also local specialists in physical therapy as well as a variety of mental health providers. Hardwick is also home to many “holistic” medical providers such as chiropractic care, Reiki, acupuncture, massage therapy, and more.

Copley Hospital is the closest full care facility, located in Morrisville, 13 miles to the west. Providing continuity of care, the Health Center physicians are also members of the staff at Copley Hospital. Other area hospitals include North Country Hospital in Newport, Northern Vermont Regional in St. Johnsbury, Central Vermont Hospital in Berlin, and the Fletcher Allen Health Center in Burlington.

### **Child care**

Childcare is a critical service for many families, especially single parent families and where both parents work. Child care facilities are all privately operated although there are some state programs to help individuals and families pay for the service. According to the state childcare database ([www.brightfutures.dcf.state.vt.us](http://www.brightfutures.dcf.state.vt.us)), in 2013 there were 11 registered child care homes and three licensed child care facilities in town.

### **Other community wellness services**

The Town of Hardwick does not provide social services to residents but does contribute financial support at Town Meeting to private and non-profit organizations that do. Many of these services are critical to families in order to meet day-to-day needs. The town also appoints a service officer every year to guide residents in need of services.

The organizations supported in 2013 are listed below:

- Greensboro Nursing Home
- Aid to Women, Men and Children in Abuse and Rape Emergencies (AWARE)
- Northeast Kingdom Youth Services
- Caledonia Home Health Care and Hospice
- Northeast Kingdom Human Services Inc.
- Area Agency on Aging for Northeastern Vermont
- Hardwick Senior Citizens
- Hardwick Area Food Pantry
- Lamoille Family Center
- Greensboro Early Learning Center
- North Country Animal League
- Lamoille Valley Even Start
- Lamoille Housing Partnership

### **Jeudevine Memorial Library**

Since 2000 and under the leadership of the new Library Director, several short-term goals have been achieved at the public library to bring it up to modern standards. Equipment improvements include public access computers, a copy machine, high-speed internet, and 24-hour wireless internet access to anyone with a laptop computer. The library has recently been equipped with fiberoptic cables. The library is open Monday through Saturday for a total of 31 hours, only 4 hours of which are on the weekend.

Presently the library meets state standards set by the Vermont Department of Libraries which allows it to apply for certain grants and receive free cataloguing and books as well as other services. When new standards are adopted by the State Library Board of Trustees, the Jeudevine Library will have to develop and carry out a plan to become more handicapped accessible. The building also requires attention to roof and attic damage. The long-range plan, therefore includes a building fund and endowment campaign be initiated by the Friends of the Library.

The Jeudevine Memorial Library is one of the most beautiful libraries in the state. The library aspires to maintain its heritage while at the same time offering all the modern information



services to its community. Statistically, communities that have good libraries have a higher level of civic involvement, higher education levels, less violence, and better health. Support of the library is a responsibility shared by all members of the community.

## Cemeteries

There are seven cemeteries in the Town of Hardwick with four of these under the care of the Hardwick Cemetery Trustees. Main Street Cemetery, Maple Street Cemetery, Fairview Cemetery, and Sanborn Cemetery are all under the care of the Cemetery Trustees. West Hill and Hardwick Center Cemeteries are under the authority of the Select Board and Hardwick Street is under the care of Marcel LaBlanc.

## Recreation facilities

Hardwick's recreation facilities include the ball fields at Hazen Union High School and at the Elementary School. Men and Women's softball leagues use Hazen Union during the summer as well as two privately maintained fields, Shepard's field on Bridgman Hill and the Hootie Dome in East Hardwick. Little League is played at the Hardwick Elementary field. Hodgdon field, located on the corner of Cottage and Cherry Streets is used for T-Ball. This park is enclosed by fencing and is a play area within the village.

A Low-Ropes course was built for students at Hazen Union. The course is designed to enhance team building and cooperative skills of participants. There are two public tennis courts are also located at Hazen Union. Walking and biking trails begin at Hazen Union and wind through the woods. The Town of Hardwick is currently making plans to extend a bike path west of the village. This trail system would also use existing paths maintained by the Vermont Association of Snow Travelers (VAST) and connect with trails established by Hazen Union. These trails are also available for cross country skiing. The trail network was designed by John Morton (a two time winter Olympian) and constructed by the students.

In 2005 the state of Vermont officially rail-banked the Lamoille Valley rail-line. This designation allows the state to use the land owned by the state for non-motorized recreational uses until such time as rail becomes feasible again. Snowmobiles are the only exception to the "non-motorized" prohibition established by Congress at this time. Although the opening of this trail has been delayed, once completed it will be a valuable recreational asset for Hardwick year round.

In addition to the Lamoille Valley Rail Trail, the VAST has an entire network of trails throughout the state (see the Transportation Map for the approximate location of VAST trails in Hardwick). The Vermont All-terrain vehicle Sportsman's Association (VASA) also has plans for an expanded ATV trail network in Hardwick.

The Town has a volunteer Recreation Committee that coordinates a number of activities for youth including a swimming program at Caspian Lake and maintaining an outdoor skating rink during the winter months. They are hoping to encourage greater use of Mackville Pond as a village park for picnics and swimming. The Recreation Committee hosts family events, as does the Recreation Committee. The committees are constantly exploring new programs to offer as well as upgrading existing ones.

The Hardwick Trails were created in 2003 and recently held a public event to celebrate 10 years of offering Hardwick area residents and visitors a 10k four-season trail system for non-motorized use. Supported by Hardwick's taxpayers and by active grant writing and fundraising by the Hardwick Trails Committee, the Trails offer hiking, mountain biking, cross-country skiing and snowshoeing, cross several hundred acres of rolling terrain shared by Hazen Union, Hardwick Electric, the Town of Hardwick and Wendall & Bev Shepard. Maintained by a part-time caretaker and a group of volunteers, the trails are mowed in the summer and groomed for skiing in the winter. Skis and snowshoes are available for lending.

Several events and programs are offered throughout the year, including the annual Pumpkin Walk, moonlight snowshoe tours, wildlife and wildflower identification walks, bird-watching walks, and a children's ski program, all at no cost to users.

The plan by all involved is to connect the Lamoille Valley Rail Trail, the Hardwick Trails, the Hardwick to Woodbury Rail Trail, and other local trails. The Hardwick Trails also has a long range cooperative plan to connect to the Highland Lodge and Craftsbury Outdoor Center ski trails.

It has been recognized that the village doesn't have much park land beyond recreation fields. The village has the community gardens and some trails but little open space directly adjacent to the residential developments where local parents and children can gather. With so much of the village in the flood hazard area a portion should be set aside for a park for outdoor enjoyment by all.

### **Solid waste facilities**

Hardwick is a member of the **Central Vermont Solid Waste Management District (CVSWMD)**, a municipal district formed to serve 22 towns in Central Vermont. Funding for CVSWMD expenses is covered entirely by user fees and service fees. More information on CVSWMD can be found at [www.CVSWMD.org](http://www.CVSWMD.org)

The mission of CVSWMD is to provide leadership, education, and services for residents and businesses in reducing and managing their solid waste in order to protect public health and the environment to the greatest extent feasible. The District takes the lead on developing and implementing new programming and incentive for solid waste reduction in the member communities. They strive to serve their geographically diverse communities equitably and cost-effectively.

The CVSWMD is also committed to *Zero Waste*. Zero Waste is an international movement where communities and businesses strive to shift how they think about and use resources. Zero Waste won't eliminate discards. Rather, working towards Zero Waste means striving to capture all of the resources in such products so they can be reused and recycled in the region instead of wasted by burying them in a landfill. Reducing waste up front through good product choices is also a critical component of a Zero Waste effort.

In addition to CVSWMD, there are private haulers for curbside pickup as well as All Metals Recycling (AMR) and Gates Salvage.

### **Storm drainage**

As mentioned earlier, tightening of water quality standards at the state level could require further capital improvements throughout the storm drainage system in the village area. Storm water runoff is a critical issue especially in urban areas in Chittenden County. For the most part storm-water will be handled on a property by property basis through state storm-water permits issued to private property owners. Hardwick will need to manage storm-water from municipal roads and parking areas.

### **Town owned buildings and properties**

According to the Grand List the Town of Hardwick owns 24 properties totaling 139.9 acres. These include 0.40 acre for the Memorial Building, 14.00 acres for the wastewater treatment facility, 70.5 acres on Buffalo Mountain Road and 36.5 acres on Hopkins Hill Road. A complete list of Town owned buildings and undeveloped parcels greater than 10 acres can be found in Appendix C. In addition to the Town-owned lands the Hardwick School District owns 13.1 acres associated with the elementary school and the Hazen Union School District owns 96.7 acres with the high school. Hardwick Electric also owns 5 properties totaling 390 acres, most of this associated with 320 acres on Billings Road.

### **Other public lands**

Within the Town of Hardwick are four properties owned by the State of Vermont, two by the Agency of Transportation (AOT) and two by the Vermont Department of Fish and Wildlife (F&W). The AOT properties are associated with the Glenside landslide region along Route 15 heading out of Town toward Walden. The F&W properties are associated with accesses onto Hardwick Lake (Craftsbury Rd)

and the Lamoille River (Route 15). The State of Vermont recently constructed a boat access to Hardwick Lake, much to the delight of many bird-watching and recreational kayakers and canoers who had been requesting easy access for years.

## Goals, Policies, & Recommendations

### OVERALL GOAL

- To ensure adequate facilities and services are available to protect and enhance the lives of the residents, visitors, and businesses of Hardwick.

Facilities and services have benefits and costs which are debated every year in Town Meetings and in Montpelier. For every service that is provided, there must be taxes, fees, or volunteers to support it. Some services are expected of any community - police, fire, and rescue service- while others are not - plowed sidewalks. Each town decides what services they are willing to pay for in order to receive the benefit of those services.

### GOALS

#### Sewage and septic

- All wastewater in Hardwick is appropriately treated so as to protect public health.

#### Water

- All household water supplies should be clean and be of an adequate supply.

#### Public safety

- To provide a safe environment in which to work, live, and play.

#### Health facilities

- For Hardwick to continue to have a variety of quality local health care options.

#### Child care

- To have quality affordable local child care opportunities in Hardwick.

#### Community wellness

- To have adequate services available to protect and enhance the lives of residents and visitors.

#### Library facilities

- To maintain and enhance library facilities and opportunities.

#### Cemeteries

- For Hardwick's cemeteries to be maintained with respect and dignity and have sufficient capacity to support future need.

#### Recreation facilities

- To maintain and enhance recreational facilities and opportunities.

#### Solid waste facilities

- For Hardwick's residents and businesses to responsibly dispose of solid waste including efforts to reduce the amount of waste generated and increase recycling.

#### Storm drainage

- To provide storm drainage facilities as needed for the proper treatment of storm runoff.

#### Public lands

- For suitable amounts and types of land to be set aside in Hardwick for public use and enjoyment.

### POLICIES

#### Septic and sewage

- All wastewater treatment systems must receive a state wastewater permit before construction begins.
- Septic systems are not permitted on slopes greater than 20%. (state standard)

#### Water

- All wells must be located at least 100 feet from any septic field. (state standard)

#### Public safety

- All residential development should be accessible to emergency vehicles.

Health facilities

- Hardwick supports any reasonable proposal to locate a health or dental facilities in town.

Child care

- The development of day care facilities and other related services will be supported.

Community wellness

- Human services should be delivered locally to the extent feasible.

Library facilities

- Hardwick supports the efforts of the Jeudevine Memorial Library.

Cemeteries

- For Hardwick's cemeteries to be maintained with respect and dignity and have sufficient capacity to support future need.

Recreation facilities

- Developers of large residential projects should include adequate open space for recreation by the future residents of the project.

Solid waste

- All projects must provide for adequate removal of solid waste.

Storm drainage

- All projects shall maintain water quality in Hardwick's lakes and streams through proper treatment of storm water runoff.

Public lands

- Before any purchase of land to be held by the public, the entity must report the anticipated loss of value from the Grand List to the Select Board.

ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

Sewage and septic

- The Health Officer and Select Board should report any failed wastewater systems to the state for compliance with state wastewater regulations.
- Any regulations developed by the Planning Commission should require the applicant to demonstrate compliance with state wastewater regulations.

Water

- Any regulations developed by the Planning Commission should require the applicant to demonstrate compliance with state water regulations.

Public safety

All local development reviews should ensure that the site may be accessed by first responders and emergency vehicles.

Child-care

- ~~Any proposed regulations should provide for the creation of child care facilities especially those that will be operated out of the operator's home.~~

Community wellness

The town should support, through annual appropriations, the efforts of regional human service providers.

Recreation facilities

- The Planning Commission should consider requiring developers of large residential projects to include adequate open space for recreation by the future residents of the project.

Solid waste

- The Select Board should review local solid waste, junk and health ordinances to ensure the proper regulations are in place to protect the public health safety and welfare.

Storm drainage

- ~~The Planning Commission should consider requiring developers to demonstrate compliance with state storm water rules as well as general storm drainage standards.~~

Overall

~~The Planning Commission and Select Board should review all 'Act 250' applications for its impact on community facilities and services in town. Where the application is determined to not conform to this chapter or any goal or policy, the Planning Commission or Select Board should participate in the 'Act 250' process in order to ensure the concerns of the town are addressed.~~

## B. INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS PLAN

Municipal planning for telecommunication hasn't been a major concern for most communities since the early to mid-twentieth century when phone lines were first run into towns. Once phone coverage became common, the topic wasn't addressed often. Later television broadcasts were available and became more common without much planning by municipalities. In the last fifteen years of the century, we saw an explosion of technology and innovation. Cell phones first became available for cars and soon after as handheld cellular phones. Broadcast television has been replaced with cable and satellite service. Computers and the internet evolved from a system used by academics at universities to a point where computers are present in most homes and websites and email are a vital component of any business.

Hardwick has enjoyed upgrades in telecommunications and information technology infrastructure in the past five years, although there is still room for improvement. While the village areas have cable television and DSL phone coverage, many of the rural parts of town lack access to adequate broadband internet service. Although a new cellular provider has recently become available, some of the most remote areas of town may still have difficulty with a reliable cellular connection. Wireless internet service has also improved, but still may be inadequate for some uses or in very remote places. Maintaining adequate service continues to be important for Hardwick to sustain its competitiveness in an economy that will continue to rely on changing broadband infrastructure.

This plan recognizes that technology is evolving very fast therefore some of the specific recommendations presented here may be rendered obsolete before this plan expires. The Hardwick Planning Commission and Select Board will plan for these broadband infrastructure components based on advice from experts familiar with the latest in information technology.

### Definitions

Some definitions are important for a common discussion of the issue.

- Broadband: a network speed of 200Kbps (FCC definition). This figure will likely increase over time as technology advances.
- ISP: Internet Service Provider
- WISP: Wireless Internet Service Provider
- DSL: "Digital Subscriber Line" is a family of technologies that extends the ability of copper telephone lines to carry high-speed data telecommunications over short and medium distances.
- WiFi: Short for "Wireless Fidelity", WiFi is a brand name for an industry standard used for providing Local Area Networks (LANs) over license free wireless spectrum.

### Point telecommunication facilities

Point telecommunication facilities (or point to point networks) are those that are designed to provide telecommunication services to a fixed point (your home or business). Currently most Vermonters could potentially have up to three point facilities in their home- cable/satellite (for television), telephone lines, and wireless internet connection (if separate from telephone and television on a WISP network for instance). As mentioned above these point systems are consolidating such that it is now possible to have a single point telecommunication facility handling multiple roles- a cable line being used for television, internet, and phone (voice over internet protocol) simultaneously.

#### Phone lines

Fairpoint is the incumbent telephone company for the Hardwick central office code (the "472" local phone numbers) which includes most of Hardwick. A small portion of town adjacent to Greensboro Bend is in the Greensboro central office code ("533" local phone numbers). Fairpoint is regulated by the public Service Board through a Regulation Plan which runs for four year increments before being renewed. Phone lines can also provide internet service over "dial up" or broadband

speeds via DSL. DSL is limited to locations with certain types of phone lines and having distances within 3 miles from an office or, with newer technology, 5 miles. DSL is available in the village areas and some rural parts of town although old phone lines have been a barrier to further expansion in some cases.

#### Cable lines

Cable companies are franchised by municipalities and municipalities can request changes to the franchise agreement when they expire. Changes could include adding public access channels or expanding service to new areas. Hardwick has cable service in the village through Comcast. The lines have been extended to East Hardwick via Center Road and Hardwick Farms Road. Comcast has extended service up Route 16 to Greensboro Bend. The state standard for extending cable lines is 16 houses per mile. Hardwick's franchise contract with ComCast is set for renewal in 2018.

#### Wireless ISP

In rural locations Wireless ISP broadband (WISP) is being marketed to home and businesses because it is cheaper than the cost of running cable or other high speed lines. In these situations each subscriber to the system would have a static antenna that would link to other antennas to provide the wireless network. The fixed antenna makes the system a point system. This type of system is currently available in Hardwick through Wireless VT Solutions, Inc, Great Auk Wireless, LLC, and Kingdom Connection. According to data developed by the Vermont Center for Geographic Information in 2010, Wireless VT Solutions and Great Auk Wireless, LLC primarily serve northern portions of Hardwick, and Kingdom Connection covers areas both in the northern portion of Hardwick and south of Route 15. Cloud Alliance, LLC has also recently installed new towers in the area providing greater fixed wireless service in Hardwick.

#### Cable & DSL Broadband coverage

Hardwick has broadband rich areas and broadband poor areas. In the village, residents and businesses may have multiple options to receive broadband internet service. Both Comcast provides cable modem service, and Fairpoint and Sovernet and Verizon DSL have DSL service in this area. Cable modem service is readily available along some portions of Route 16, but is intermittent in other areas in the eastern half of the Town of Hardwick. DSL is also available in these areas. Rural areas in the western half of Hardwick have DSL options only. Other areas have no cable or DSL broadband options as the lines do not extend far into the most remote areas. As mentioned above, this may increasingly be a barrier to economic development.

#### Fiber Broadband

Both the Jeudevine Memorial Library and the public Memorial Building have been connected to high-bandwidth fiber optic data transport networks. Fiber optic service can transmit gigabits of data per second (gbps), giving these community institutions significant capacity to adopt and utilize broadband technologies.

### **Mobile telecommunication facilities**

Mobile communications can be divided into two categories- cellular and PCS. Both categories can be used for mobile voice and data services, including cell phone, text messaging, and Internet. Another, semi-mobile, facility is that of Local Area Networks (more commonly known as "WiFi" hotspots).

The Vermont Telecommunications Plan 2011 calls for mobile service to be available along all key transportation links which include interstate highways, and non-seasonal US and state highways by the end of 2013.

Cellular phone service

Cellular service is defined as a subset of personal wireless service (PWS) employing modulation in the 800 MHz spectrum. Cellular's advantage is the greater range for communication but it uses a narrower bandwidth (carries less data).

Hardwick has been served by AT&T for some time with cellular service, and more recently Verizon made service available in town.

The Vermont Telecommunications Plan 2011 identifies cellular target corridors along major or secondary roadways where cellular service is not available or is interrupted. These corridors will receive a priority focus to coordinate efforts such that strategies being employed to improve broadband availability may also result in improved cellular availability along these corridors. Strategies include use of electric utility telecomm infrastructure, subsidy of infrastructure that is not otherwise economically feasible, aggregation of institutional demand, expeditious permitting policies, and increased user adoption of broadband technologies.

Personal Communications Service

Personal Communications Service (PCS) are a subset of Personal Wireless Services generally employing digital modulation at higher (up to 2GHz) frequencies. PCS uses a wider bandwidth so it can carry a greater amount of information but at the expense of coverage.

According to drive tests conducted in June of 2010 by the Vermont Center for Geographic Information, AT&T provides wireless data service that can be successfully reached along some highway corridors in Hardwick, particularly Route 15. However, since that time, local sources also indicate that Verizon has made mobile wireless service available in Hardwick as well.

WiFi Hotspots

"WiFi" hotspots are places where a computer user can access the internet wirelessly (sometimes for a fee and sometimes free) if their computer has the hardware to take advantage of the opportunity. "WiFi" technology operates at 2.4GHz frequency so, in the same way that PCS carries more information at the expense of coverage compared to cellular, WiFi carries more information than PCS but with even more loss of coverage. While WiFi could carry voice (in the form of voice over internet protocol) it is generally used to send information.

Hardwick village has public and private WiFi locations, and several downtown businesses offer Wi-Fi access to their patrons. The public can access the Wi-Fi network at the Jeudevine Memorial Library, and the Hardwick Townhouse has a Wi-Fi network that will be available to the public at least until the end of 2014. Some entities maintain closed Wi-Fi networks to facilitate their day to day information technology use.

Other wireless communications

Emergency service communications operate in the UHF bandwidth (460MHz) and VHF bandwidths (150 MHz) depending on the system. Other wireless communications may exist in these bandwidths including pager services (VHF) and other businesses with dispatch systems like buses and delivery companies. HAM radio operates with repeaters in these ranges as well as at High-Frequency (HF) bands.

Hardwick still lacks some cellular and PCS coverage in most parts of town. Bringing service into town will enhance the lives of residents as well as visitors. WiFi would also be a bonus as visitors would be able to access their internet while on the road. One important consideration to any discussion of mobile telecommunication facilities is that of towers. In the past, towers for radio and television were hundreds of feet tall (thousands of feet tall in the west and mid-west of the US). Today towers rarely exceed 120 feet except for radio towers. Cellular companies have resorted to placing antennas on farm silos, barns, church steeples, flag poles, or anything sufficiently off the ground. The cost of taller structures does not generally provide a large improvement in coverage. For example, in the Hutchins



report discussed below, an increase in the tower height from 97 feet tall to 172 feet tall increased coverage from 86% to 90% (Bridgman Hill site). Most communities regulate towers for scenic and aesthetic reasons. In planning for telecommunications, Hardwick should consider the impacts of towers on these resources.

In 2005 the Hardwick Planning Commission contracted with Mark Hutchins, Radio Frequency Engineer to conduct a Personal Wireless Services Analysis of Facility Needs and Siting. This study provided many valuable conclusions including which potential sites would not provide much coverage and which ones would provide more coverage. No single tower will work for either PCS or cellular service in town. A combination of one or more towers will be needed. For example, combining the “Rinker” tower site on Bridgman Hill and one of the Buffalo Mountain sites (Davis or BANM) would provide 96.1% of the town with adequate cellular coverage and 81.8% of the town with adequate PCS coverage. The areas missed for cellular coverage include Routes 14 (north of Tucker Brook Road) and 16 (north of the Bayley Hazen Road). Other towers would be needed to provide coverage in these remaining areas. Since the development of the 2008 Town Plan, some communication facilities have been added to the “Rinker” tower.

### Goals, Policies, & Recommendations

#### GOALS

- For residents and visitors of Hardwick to have access to a range of broadband opportunities.
- For mobile telecommunication services to be available at a variety of frequencies, including cellular, PCS, and “WiFi”, to meet a variety of information and communication needs.
- For Hardwick to have 100% coverage for DSL, cable, and cellular phones in town by 2018.

#### POLICIES

- Hardwick supports investment in telecommunication infrastructure within the Town.
- Where possible, antennas and other small telecommunication facilities should be exempt from zoning provided FCC standards are met for Radio Frequency (RF) emissions.
- Towers near other towers should co-locate antennas whenever possible to avoid tower proliferation. Alternatively, towers can locate at least a mile apart and, if possible, be located on a different hill or ridgeline to increase coverage in town.
- To minimize conflicts with scenic values, tower design and construction shall employ the following principles: a) where feasible, be sited in areas not highly visible to the traveling public, or from residential areas, historic districts, and public use areas or outdoor recreation areas such as hiking trails; b) be located in forested areas or be sufficiently landscaped to screen the lower sections of towers and related ground fixtures from public vantage points such as trails, roads, and water bodies; c) utilize materials, architectural styles, color schemes, lighting fixtures, mass and other design elements to promote aesthetic compatibility with surrounding uses and to avoid adverse visual impacts; where prominent views of a site exist, be located downgrade of the ridge so as not to exceed the elevation of the immediate ridge; e) where construction of access roads are involved, to minimize visibility, be situated to follow the contour of the land and to avoid open fields or meadows; f) avoid peaks and ridges identified as scenic resources in the scenic resources chapter of this plan; and g) no external lights.
- In planning for telecommunication towers, consideration shall be given to the environmental limitations of any given site. Impacts of the use on wildlife habitat, soil erosion, forestry, and agricultural lands, and similar resources should be carefully addressed. Projects that materially impact these resources shall be discouraged.
- Towers and related fixtures that fall into disuse or are discontinued shall be removed by the facility owner to retain the values set forth above. Owners may be required to post bond for removal.

**ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION**

- Hardwick should create a committee to investigate options and work with private businesses to encourage the adoption of telecommunication infrastructure.
- The Planning Commission, Select Board, and any committee that may be formed should work together to plan for telecommunication infrastructure in the town. As technology advances, the town will need to adjust the planning accordingly.
- The Planning Commission should address telecommunication towers to ensure the policies described above are addressed.
- The Town will work collaboratively with others to promote increases in Internet access through the Hardwick community.

## C. ENERGY PLAN

### Energy sources

Energy plans generally group discussions into three areas: electricity, heating and transportation.

#### Electricity

Electricity can be generated from a variety of sources including hydro, nuclear, and fossil fuels (coal, oil, and natural gas). Other potential sources of electricity include solar, wind, biomass (wood burning), and methane recovery (from landfills and farms).

There are no commercial electricity generating facilities in town although Hardwick Electric Department (HED) owns a hydro-electric generating facility in Wolcott. HED only receives part of its electricity from this facility and the remaining power is purchased from a variety of sources including hydro (regionally and statewide), natural gas (Massachusetts Municipal Wholesale Electric Company), and biomass (McNeil wood burning facility in Burlington and Vermont Electric Power Producers Inc.). HED will be discussed further below in Energy Providers.

New hydro-generating facilities are not expected in the region and none are anticipated for Hardwick. If new hydro-electric sites come on line they will likely be micro-hydro projects such as the one being built in Greensboro. These small facilities capture power from smaller streams so they have less of an environmental impact compared to large dams. Hardwick may have opportunities to repower some old dams (East Hardwick, Mackville, and Nichols Pond) with this technology and it should be investigated further.

Hardwick encourages the development of home and community-scale renewable energy. Further outreach and consensus building is requirement before it can be determined if industrial-scale development for energy is in keeping with Hardwick's rural, small-town nature. In making this determination, the pros and cons of large-scale energy projects, including potential visual, health, environmental, and economic impacts must be considered.

Towns cannot directly regulate energy production. Any project that will provide energy to the overall power grid is exempt from local zoning. These applications are reviewed by the Public Service Board in what is known as a Section 248 review. Towns can participate in the hearing and conformance with the town plan is one requirement that needs to be met. The policies found here in this plan are therefore one of the only ways to influence the location of wind farms and other power generation plants. As approximately one third of the land in town can support private wind generation, Hardwick will need to establish clear policies to guide the development of this resource.

#### Heating

The heating of homes and businesses is an important sector in energy plans especially in northern Vermont. One locally renewable source for heat in Hardwick is wood. Solar power has also been used efficiently to heat water which is another component of home heating. Other sources of home heating fuel include oil, liquid propane gas (LP), kerosene, and electricity.

According to the most recent American Community Survey 5-Year Averages (2008-2012), Hardwick residents relied on only four primary sources of home heating fuel. 54.6% of residents reported heating their home by fuel oil, 21.8% by wood, 13.7% by bottled, tank or liquid propane gas, and 2.5% by electricity. Many homes have multiple sources of heating so even if a home is primarily heated with oil, it may also have a wood stove for backup or secondary heat. These statistics support the continued need for good local forest management and public education of energy conservation methods.

#### Transportation

Other than walking or biking, all transportation relies on fossil fuels.

## Energy providers

### Electricity

There is only one utility which provides electrical utility services in the Town of Hardwick. The **Hardwick Electric Department (HED)** provides electric utility service to all of Hardwick as well as parts of Wolcott, Woodbury, Craftsbury, Greensboro, Elmore, and a small area in Cabot. HED is also a part of the Vermont Public Power Supply Authority (VPPSA) which pools the resources of Vermont's municipal and cooperative electric utilities to obtain economies of scale for operations, planning, financing, wholesale power transactions, and other aspects of utility business. Hardwick Electric customers' usage has remained flat over the past six years.

### Heating

Heating fuel is provided entirely through private individuals and companies.

### Transportation

Fuel for transportation is provided locally by privately owned and operated service stations.

## Energy consumers

### Municipal facilities and services

Public facilities and services require significant expenditures of tax dollars for energy. For instance, according to Town Reports, the Hardwick Elementary School spent \$36,701 for electricity, \$28,331 for fuel oil, and \$1,679 for propane in the 2006-2007 school year. Town facilities and equipment rely on electricity and heat as well as fuel for snow plows and equipment. In 2012, the Highway Department spent \$57,074 on diesel fuel, the Fire Department used \$8,757 to heat the station, and \$6,469 was spent on electricity for the Memorial Building. Hardwick should continue its effort to purchase efficient vehicles, equipment, and buildings saves tax dollars over the life of the product.

### Residential, Commercial, and Industrial

Residential heat and electricity account for 34.6% of all energy used statewide (not including the energy used by residents for transportation). Commercial and industrial land uses consume a much lower percentage of the total energy use at 13% and 12% respectively. Considerable savings in energy can, therefore, be made by making modest improvements to the efficiency of homes. Residential buildings can save energy by installing more efficient heating, improving insulation, replacing inefficient windows and appliances with newer efficient models, and being sited to take advantage of passive solar heating.

The Town of Hardwick has voted to become a Clean Energy Assessment District, which allows residential properties to participate in the Property-Assessed Clean Energy (PACE) program. The PACE program is a way of financing energy efficient home improvements by borrowing money and tying the payments to the property rather than the owner. PACE financing payments can be transferred to a new homeowner at any time, even before the assessment has been paid off. Transferability helps to ensure that investments will serve current property owners in the short term, and provide future residents with lower energy bills and improved comfort. Projects may include, but are not limited to whole home air sealing and insulation, window retrofits, heating system upgrades, water heater replacements, pellet boilers, and renewable installations such as solar, wind, and geothermal. PACE also improves the housing stock of the town, contributes to the town's energy goals, and promotes job growth in the field of energy efficiency.

Most of the large commercial and industrial users have realized the effects of energy costs on their profit margins and employ their own professional energy consultants.

As mentioned above, Hardwick is dependent on outside electric power providers as a source for power production. In a market where there are a limited number of electricity producers, Hardwick is potentially vulnerable to increases in the costs of electricity. Public education of energy conservation methods would also be useful in saving customers money and reducing our dependence on outside sources.

According to the U.S. Energy Information Administration, approximately 34% of all energy used in the state is for transportation, almost entirely for cars and trucks. Energy demand for transportation can be influenced by the location and type of roads provided, convenience of services and facilities, structuring of routes for school buses, and the siting of new residential development. According to most recent American Community Survey 5-Year Averages, more than 25% of Hardwick residents spent at least 45 minutes driving to work. Carpooling and other efforts can save money, time, and energy for residents of Hardwick.

### Land Use, Development Patterns, Buildings & Equipment

Compact, mixed use development can reduce reliance on the automobile, vehicle miles travelled, and inherent energy system costs, including energy costs associated with maintaining roads and related infrastructure. Targeting economic and residential growth within areas intended for more concentrated development allows people to walk to their destinations, and makes public transit services between growth centers more economically feasible.

At the site level, a south-facing building orientation and landscaping can effectively reduce energy demand. Clustering and other energy efficient development patterns can be encouraged - or required - through zoning and subdivision regulations.

The State of Vermont has energy efficiency codes for residential and commercial construction. The Town can establish or encourage development standards that exceed minimum state requirements through zoning and subdivision regulations and through local energy assistance programs.

In addition to codes, there are a number of other state programs to promote municipal energy efficiency and the use of renewable energy resources, such as the School Energy Management Program, and programs that support the conversion of school heating systems to wood-burning systems.

Municipal energy savings are best achieved through regular energy audits of municipal buildings and the use of "life cycle costing" practices that incorporate long-term energy savings in the fiscal analysis of facility construction and equipment purchases. Such costing methods often demonstrate that long-term energy savings more than offset the higher initial purchase or construction cost of energy-efficient equipment and building improvements.

### Goals, Policies, & Recommendations

Energy is a critical component of economic development and global environmental concerns. The State of Vermont has had varying success in achieving the goals of clean, reliable, and renewable energy. Energy for electricity used in town is generated primarily from renewable sources while energy for transportation is almost exclusively non-renewable. Residents do not have the option to change some of these sources of energy but everyone can save money and energy by using efficient appliances and vehicles or conserving power by turning off unused equipment.

#### GOALS

- For citizens to generate energy locally from renewable sources, whether for heating, electricity, or transportation.
- Energy should be provided in a safe, reliable, and efficient manner.
- To promote energy efficiency and conservation in the design construction and use of municipal, commercial, industrial, and residential structures.

#### POLICIES

- Hardwick supports its residents in using wind and solar to generate electricity locally provided scenic and aesthetic concerns are met.
- Hardwick supports the efforts of HEART in their efforts to inform decision makers and citizens on energy efficiency and conservation.
- Hardwick encourages the development of home and community-scale renewable energy. Further outreach and public dialog is needed to determine if industrial-scale development for energy is in keeping with Hardwick's rural, small-town nature.
- Hardwick's local renewable energy portfolio should be expanded beyond wood to include appropriately sited solar, hydro, and wind power. Siting shall be in accordance with community consensus established through public outreach efforts, such as a charrette.
- Within subdivisions, planning for transmission lines should be strongly weighed in favor of underground placement to achieve the scenic objectives of this plan. Transmission lines must be placed underground to achieve the scenic objectives of this plan.
- Energy conservation and energy efficiency shall be achieved through building energy audits, weatherization programs, equipment replacement, and adherence to and enforcement of energy efficiency codes. Outdoor lighting, especially parking areas should use cutoff fixtures to reduce the amount of light pollution and to allow lower wattage bulbs.
- Building codes for energy efficiency shall be enforced, and the development of local codes that are a generation ahead of state codes should be explored.

#### ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

- The Planning Commission and Select Board should coordinate a public outreach project to help develop clear policies with respect to commercial wind farms in Hardwick.
- The Zoning Administrator shall provide educational information to property owners regarding lot layouts, building siting and design and construction techniques that maximize access to on-site renewable energy resources and incorporate emerging technologies. The Planning Commission should exempt or provide accommodations for minor alternative energy facilities (e.g. solar collectors).
- The Select Board and School Board shall continue to realize energy savings through energy audits of all municipal buildings and the use of life cycle costing practices that incorporate long-term energy savings in the fiscal analysis of facility construction and equipment purchases.
- The town should consider establishing a new energy reserve fund that will help cover the cost and leverage other funds for planned improvement projects to improve energy efficiency.
- Hardwick shall support the state Web site "Go Vermont" for carpooling and van pooling for regular trips and single trips by providing information for carpooling and providing appropriate links from the Town's Web site.
- The Town shall encourage the provision of safe and convenient alternatives to automobile travel for local trips, including the investigation of a bus route from Hardwick to Montpelier, where many residents work.
- Builders and homeowners should check with Efficiency Vermont for energy standards and conservation opportunities.
- The Select Board may participate in Section 248 hearings that relate to projects within the Town to review applications and assure that the requirements as set forth in the Town Plan are met.

## D. EDUCATION

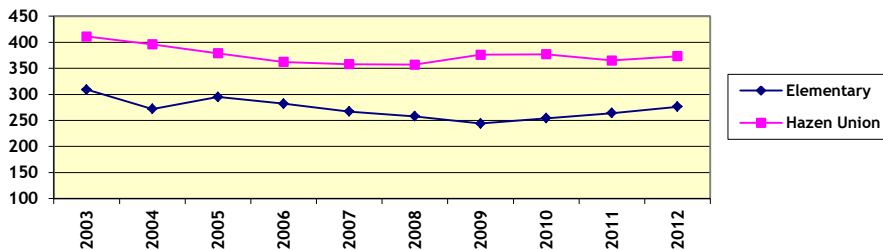
### Current facilities

#### Hardwick Elementary School

Hardwick's youngest students (k-6 grades) attend the Hardwick Elementary School that is under the jurisdiction of the Hardwick Town School District within Orleans Southwest Supervisory Union (OSSU). The present building opened its doors to students in 1961. A major addition housing eight classrooms, a multipurpose room, and office complex was completed in 1988. As of March 31, 2014, 243 students in grades K-6 were enrolled at Hardwick Elementary School. Hardwick Elementary School can accommodate 360 students and is not considered to have a space problem at this time.

Figure 5 below shows the changes in enrollment at the Elementary School since 2003. (<http://education.vermont.gov/new/html/data/enrollment.html>)

Figure 14: Enrolled students at the Hardwick Elementary School and Hazen Union (2003-2012)



#### Hazen Union High School

**Hazen Union School** opened its doors in 1970 and serves the communities of Hardwick, Greensboro, and Woodbury. Additionally, a few students from Stannard, Walden, Wolcott, and Wheelock attend on a tuition basis. As of March 31, 2014, 368 students in grades 7-12 were enrolled at Hazen Union, of those 53 were tuition students. Vocational students attend classes at Hazen Union and the **Green Mountain Technology and Career Center (GMTCC)** located in Hyde Park with a satellite facility in Hardwick. Hazen Union School can accommodate approximately 500 students and is not considered to have a space problem at this time.

#### School lands

Hazen Union is situated on 99 acres of land and much of its biological diverse woodland is managed by the school's forestry program for wildlife, recreation, timber and maple syrup production. About 85 of these acres are used on a regular basis by the Science Department and other school-wide programs including the ropes course that was built in 1995-96 school year. Twenty-two acres are managed for maple syrup production, and one half acres have been clear cut for planting Christmas trees. This is the site of a United States Geological Survey (USGS) approved weather station. Six hundred taps produce about 110 gallons of maple syrup, boiled in the student built sugarhouse. The cedar logs cut from the small clear-cut have been used in the construction of a Forestry Program cabin, built by students and staff. Revenue from the sale of syrup and cull wood sold as firewood is used to support the Maple Sugaring Program.

The Hardwick Trails is a nature trail that connects to the Town Forest and is used extensively as a cross-county path. There are nature trails and a low ropes course on the property.

#### Other resources

Playing fields for school's soccer and baseball programs are adjacent to the main building. Two public tennis courts are also located there.

The technology education program has facilities for woodworking, metalworking, a wood drying kiln, a drafting room and an electronics lab. The technology program also uses creative and innovative tools to prepare students for the future.

Community use of facilities

The buildings and athletic fields of Hardwick Elementary and Hazen Union are used for a wide variety of activities and events by groups within the community and beyond. These include craft fairs, basketball and volleyball players using gyms, a community chorus, a Tae-kwon Do class, and a diversity of occasional events, from a Fish and Wildlife boating safety course to candidate forums. It is also the site for annual events such as Town Meeting Day and the Annual Alumni Banquet.

The Little League uses the athletic fields at Hardwick Elementary. The fields at Hazen Union are used by a women’s softball league, a men’s softball league and for Babe Ruth baseball.

**Other educational services**

Early education

Orleans Southwest Supervisory Union is committed to providing a creative, high-quality, developmentally appropriate curriculum that affords children the opportunity to explore, discover, and enjoy the learning process while engaging in creative integrated hands-on learning activities that encompass the whole child. Our curriculum is based on the belief that children need to experience child-directed and teacher-directed activities each day through the use of an integrated curriculum.

Our goal is to enhance the development of readiness skills through our learning materials in an enriched learning environment, promote family involvement through program activities, and encourage the development of creativity; all of which helps to build a successful foundation for early learning. We accomplish this through developmentally appropriate programs that meet the needs of each individual child and his or her family. We provide for each child a balance of education and play.

Our academic development programs include:

- Preparation for Kindergarten
- Learning through doing
- Individualized attention and activities
- Conferencing with teachers and parents
- Progress monitoring

Orleans Southwest SU has two public preschool programs within the supervisory union and partners with local providers either in a partnership or subcontract. Any child who resides in the towns of Craftsbury, Greensboro, Hardwick, Stannard, Wolcott, or Woodbury may attend a preschool program for a maximum of 10 hours at no charge, provided the tuitions between the school district and program are the same. If not, the difference must be negotiated between the provider and parent. Some programs may have age specifications and may provide less than 10 hours.

The following programs are designated public preschool programs with Orleans Southwest SU.

- Depot Center -Wolcott- SU program -
- Village Center-Hardwick- SU program-
- Four Seasons of Early Learning- Greensboro Bend-Partner
- East Hill Preschool- Craftsbury-Partner
- Hardwick Head Start- Hardwick- Partner
- Wee Explorers- Morrisville-subcontract
- Mud City Kids--Morrisville-subcontract
- Orchard Valley Waldorf School- Plainfield-subcontract



#### Essential Early Education

Orleans Southwest Supervisory Union has a goal to foster competence in the social, emotional, cognitive, and physical development of preschool children at risk of later school difficulty. This can be accomplished through an educational approach individualized to the needs of each young child in the child's home, community and/or early childhood center. The Early Education Program of the Orleans Southwest Supervisory Union provides a comprehensive early intervention program for eligible children ages 'birth through five' including those who are disabled, disadvantaged, or otherwise at risk for school failure.

A child may access one or more of the following programs:

- Essential Early Education (EEE) is special early education for eligible children ages three through five.
- Early Compensatory Education (ECE) is offered for children ages three through five who are delayed in language and communication skills. This is considered a preventative program for children.
- Children's Integrated Services - Early Intervention is for children birth to three with specific concerns regarding health, language, social, cognitive or emotional needs.

#### Vocational training

GMTCC offers career and technical education to all incoming juniors and seniors as well as adult learners in the surrounding school district areas. There are programs in automotive technology, business administration, computers, forestry and land management, manufacturing technology, and health and human services among others. Students in the middle school are also involved with pre-tech experiences through the forestry program.

#### Personalized Learning Plans

Schools are now obligated to prepare students for higher education or technical careers by customizing their educational programs as early as the elementary school. Personalized Learning Plans will include such activities as field-based learning, job shadowing, and community experiences outside of the classroom.

#### Food-based Learning Initiative - Our Food Matters

During the 2013-2014 school year all member school districts in the Orleans Southwest Supervisory Union agreed to fund a pilot program that capitalizes on Farm to School Curriculum and Sustainable Agriculture. This initiative captures many of the agriculture assets in the greater Hardwick community to benefit students and community members alike.

#### Secondary School Choice

Recent legislation has expanded the opportunity for all students in grades 9-12 to enroll in the secondary school of their choice. This happens through a lottery system and approximately 10 students can participate in any given year.

#### Jeudevine Memorial Library

The library offers a wide range of educational opportunities and programs for all ages, especially for pre-school and young children.

### **School governance**

The Hardwick School Board is responsible for policy setting and identifying the knowledge, skills and dispositions that each student will develop before graduating. The Board of Directors has five seats, with three seats having a three year term and two seats being elected annually.

Similarly the Hazen Union Board of Directors is responsible for policy setting and identifying the knowledge, skills and dispositions that each student will develop before graduating. There are eight seats on the board of which Hardwick has four seats, which are elected at Town Meeting for three year terms.

Orleans Southwest Supervisory Union consists of six towns in four counties: Craftsbury and Greensboro in Orleans County, Hardwick and Stannard in Caledonia County, Wolcott in Lamoille County, and Woodbury in Washington County. The total population of all these towns is about 6,950 with approximately 1,200 students being served in grades pre-K through 12. OSSU has the administrative responsibilities for the town school districts. General oversight of the supervisory union falls to the Superintendent, who is appointed by the Orleans Southwest Supervisory Union.

### **Educational costs**

The Vermont State Legislature enacted Act 68 during the 2003 legislative session which revised Act 60, the Equal Education Opportunity Act approved in 1997. Act 68 sought to equalize the burden of taxation between the various communities within the state of Vermont by establishing statewide education tax rates on residential and non-residential property. Residential property tax rates would then be adjusted by a formula that was based on a school districts educational spending per pupil. To ensure equity between the local grand lists throughout the state, Act 68 established the concept of the Common Level of Appraisal. Both the residential and non-residential tax rates are adjusted by the Common Level of Appraisal determined annually by the VT Department of Taxes.

On July 26, 2007 the Hardwick Town School District issued a general obligation bond to the Vermont Municipal Bond Bank, bond payable, and interest at 4.21%. Interest is paid semi-annually. Principal of \$30,000 is due on December 1<sup>st</sup> of each year until 2013, then \$25,000 due on December 1<sup>st</sup> of each year until 2017. Originally the District borrowed \$275,000 for a replacement boiler.

Hazen Union has two outstanding bonds. The roof renovation will be paid off in 2016-17. The driveway construction bond will be paid off in 2014-15.

### **Educational attainment**

According to most recent American Community Survey 5-Year Estimates, 89.3 percent of Hardwick's residents over the age of 25 have a high school diploma or equivalent. This is below the statewide average of 91.3 percent and may indicate a need for educational services in this area. Nearly 12 percent of Hardwick's residents failed to achieve even a primary education (less than ninth grade). In 2000, only 78.0 percent of residents had a diploma so significant improvements are being made.

A look at college attainment figures reveals that 22.8 percent of residents have completed a bachelor's degree or higher which is below the state wide average of 34.2 percent. This figure has changed much since 2000 when only 13.5 percent had a four year degree.

### **Adult educational services and facilities**

There are a few places in nearby where college level classes are available. In Morrisville the Community College of Vermont (CCV) has a satellite office where classes are taught. CCV currently has 350 students, most between the ages of 25 and 40 years old. CCV offers programs in business and liberal arts as well a new program in nursing. CCV also operates instructional sites in Hardwick and some of the surrounding towns.

Johnson State College and Lyndon State College are both four-year colleges that are part of the state college system and are located within 30 miles of Hardwick. The nearest private college is Sterling College located in Craftsbury.

As mentioned earlier, GMTCC offers adult education for anyone who is no longer enrolled in a traditional high school. Another resource for adult education is Central Vermont Adult Basic Education.

CVABE is a non-profit organization that provides free instruction to individuals no longer enrolled in public school.

### Goals, Policies, & Recommendations

In order to control growth of the town in such a way as to enable residents to continue to live in Hardwick without undue tax burdens- the town will need to plan for growth so that the costs of providing educational services are not excessive. Moderate growth should enable Hardwick to respond to changes in enrollment without causing problems. Growth should not exceed the capacity of the school before the bond is paid off.

#### GOALS

- To plan for growth and development in a way that allows Hardwick to provide quality education services and adequate facilities for all residents without placing an undue burden on tax payers.
- Provide educational services and facilities to meet the needs of Hardwick's children.

#### POLICIES

- Future development in town should not exceed the capacity of the town to provide educational services.
- Hardwick supports efforts to broaden educational and vocational opportunities.
- Hardwick recognizes the importance to our community of high quality early education and day care. Hardwick supports organizations that provide these services.
- Hardwick supports the GMTCC and their efforts to broaden access to education for adult learners and to provide vocational opportunities for students.

#### ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

- Through its representative, Hardwick should continue to have an active role on the Board of Directors of Hazen Union School and Orleans Southwest Supervisory Union.
- If school populations begin to approach school capacity, the Planning Commission should investigate regulatory options to moderate growth.
- As the Jeudevine Memorial Library is an integral aspect of ensuring that broad education opportunities are available to the residents of the Hardwick area, the Library Trustees will work diligently to develop a plan of action that includes both private and public funding of an initiative supporting the Jeudevine Memorial Library building addition, thus providing adequate space and resources for these educational activities.

## E. TRANSPORTATION

### Highways

#### Classification & Function

Vermont's local roads are classified according to their importance and general use. This classification system applies to all town highways, and is used to determine the amount of state highway assistance provided to each community. Class 1 roads are those highways that while the responsibility of the town to maintain, are extensions of the state highway system and carry a state highway route number. Hardwick has 1.5 miles of class 1 roads including portions of Routes 14 and 15 that ran through the former village. Class 2 roads are the most important highways serving as corridors between towns, and consequently carry a large volume of local and regional traffic. Center Road, East Main Street (Greensboro Bend), Hardwick Street/East Church Street, and Belfry Road are Class 2 roads (see Table 7). Class 3 roads are comprised of secondary town highways that are passable year round by standard vehicles. Class 4 roads are dirt roads typically functional for only part of the year for normal traffic. The following table illustrates town highway mileages in Hardwick and surrounding communities.

**Table 13. Town highway mileage by classification**

Town	Class 1	Class 2	Class 3	Class 4	Total local (excl Class 4)	Total State
Hardwick	1.50	10.40	53.03	6.92	64.93	16.15
Greensboro	0	11.24	44.89	11.79	56.13	7.69
Walden	0	9.14	32.38	11.12	41.52	7.16
Wolcott	0	10.65	37.72	7.5	48.37	7.02
Woodbury	0	5.05	31.82	26.29	36.87	7.69

Source: VT AOT 2004

#### Traffic

Traffic volumes increased modestly in recent years. This marks a reversal of the prevailing long-term trend of steadily rising traffic volumes. This may be attributed in part to the great recession, and possibly to steadily rising fuel prices. Whatever the case, Hardwick's change in traffic volumes is similar to patterns elsewhere in Vermont.

In Hardwick, Annual Average Daily traffic (AADT) numbers (the average number of cars passing over a section of road every day) have been recorded at various locations along state routes and local routes for more than 10 years. Annually, NVDA assesses the traffic flows on local roads for Hardwick and every 3 to four years the state does the state routes. Hardwick has one permanent traffic counter on Route 15 just west of the Route 14 North (Craftsbury Road) intersection.

The traffic reported below on Table 8 reports most of the traffic levels into and out of town. The highest traffic area was Route 15 West toward Wolcott, which received, on average, 4900 vehicles per day. Traffic levels are much higher inside the village areas.

**Table 14. Traffic volume changes in Hardwick**

Traffic recorder location	AADT (yr)	AADT (yr)	% change yr 1 - 2
Rte. 15 - 700 ft. west of Route 14	4600(03)	4900(12)	+6.5%
Rte. 14 North - btwen Town Farm and Tucker	1300(04))	1200 (10)	-7.7%
Rte. 15 - West of Walden Town Line	2800(04)	2800(10)	--
Rte. 16 - North of Bayley Hazen	2000(04)	2300(11)	+15%
Rte. 14 South betwn Cherry & Terrace Hill	4300(02)	4400(12)	+2.3%
Rte. 14 - South of Carey Road	4000(05)	n/a	n/a

Hardwick Town Plan 2014

Center Road - Greensboro Town Line	1300(02)	990(10)	-23.8%
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Source: VTrans, 2012

Road Maintenance Costs

During the 2013 fiscal year, the Town allocated \$687,778 for maintaining the Town highways and garage. Capital money is separate from operational funds. In addition to the operation funds identified above, the Town of Hardwick set aside \$330,000 of funding for equipment purchases and specific highways projects. The table below illustrates the net local highway expenditures in Hardwick and similar towns for the same-fiscal year. Please note that these figures include state aid spent on roads.

The figures indicate that the Town of Hardwick expends funds on its roads at generally equal amounts as in other nearby communities.

As residential development continues in Hardwick, it is important that the Town maintain a written policy toward the maintenance and construction of roads. This will provide clear information to existing and future landowners as to the level of road maintenance service they can expect from the Town. As shown in Table 9, for each mile of road maintained within the Town, Hardwick will spend \$10,528 in funds.

**Table 15. Local road maintenance costs.**

<i>Town</i>	<i>Road Miles</i>	<i>Fiscal year expenditures</i>	<i>\$ spent/road mile</i>
Hardwick (FY 13-14)	65.33	\$678,770	\$10,528
Danville (FY 13-14)	98.65	\$1,417,213	\$14,366
Greensboro (FY 13-14)	56.13	\$626,595	\$11,163
Wolcott (FY 13-14)	48.81	\$509,000	\$10,428

Source: 2012 Budget Data: Town Annual Reports Road Miles: VTrans

Bridges

Because of the combination of our local road mileage and numerous streams and rivers, Hardwick has many bridges and culvert which it must maintain on local roads. Because of the high cost of bridge repairs, the Town relies heavily on state aid for such work. Because of the costs and the unreliable nature of state funding, towns are encouraged to minimize the number of bridges.

Town Bridge & Highway Standards and Network Inventories

The town has adopted basic bridge and highway standards and has completed a preliminary network inventory in 2007. This inventory was updated in 2013. Vtrans expects the inventory to be updated every three years. Keeping these up to date will help Hardwick qualify for reduced matching requirements in State-sponsored road and bridge programs. This will also help the town achieve a level of quality roadway infrastructure that will pay in savings over the long term. NVDA has just completed a bridge and culvert inventory this year, and the data will be delivered to the town shortly. Models for a more comprehensive road and bridge standard ordinance and further assistance with the inventory can also be pursued.

**Rail**

Lamoille Valley Corridor

The St. Johnsbury and Lamoille County Railroad, a 98-mile line between Sheldon Junction and St. Johnsbury, passes through Lamoille County along the banks of the Lamoille River. The state currently owns the line and leases use of the railroad to the Vermont Association of Snow Travelers (VAST). Freight service along the line ended in 1989 due to lack of freight to be transported, thus creating a threat to the long-term viability of the railroad.

The rail line has since been railbanked for future rail use. In the interim, VAST will operate the line as a four season recreation trail. Use of the trail is limited to non-motorized uses except for

snowmobile use in the winter. Construction of the trail has now begun in the stretch from West Danville to St. Johnsbury. Now is an excellent opportunity for the Town to plan for the location of trailheads in a manner that accommodates the various forms of travel (e.g. cycling, snowmobiling) and at different times of the year.

#### AMTRAK

The closest passenger rail service for Hardwick residents is Amtrak, located in Waterbury, Montpelier and Essex Junction. Both of these depots serve Amtrak's "Vermont" line with a daily run between St. Albans and Washington, D.C.

#### **Air**

Hardwick residents are provided air transportation service through the Morrisville-Stowe State Airport on Route 100 in Morristown, and through the Burlington International Airport in South Burlington.

#### **Recreational and non-vehicular transportation**

##### Snowmobile Trails

The Vermont Association of Snow Travelers (VAST) maintains a network of snowmobile trails on private and public lands across the state [see the Transportation Map]. VAST trails through private and public lands connect Hardwick to all of the surrounding towns. VAST trails are maintained and groomed by volunteers, and provide an important link in a statewide recreation network. <http://www.vtvast.org>

##### ATV Trails

All-terrain vehicle (ATV) use is growing in popularity and there is interest in developing a trail network similar to VAST. The Vermont ATV Sportsman Association (VASA) is interested in developing ATV recreation in Vermont and in providing ATV trail access in collaboration with other groups and landowners. <http://vtvasa.org/>

##### Bicyclists, Pedestrians and Others

Most of Hardwick's local roads were designed with only the auto traveler in mind. As cyclists - both individual and organized groups - use these roads, conflicts can arise from lack of space and poor shoulders. Future road projects should be designed to give greater consideration to non-motorized users. Model road standards provide a foundation to address bicycle use of local roads and VTrans has adopted rules for the state route system. Act 34, which was signed into law in 2011, now requires the state and all municipalities to consider the needs of all users in many transportation projects, regardless of the funding source.

#### **Transit services**

##### Buses

There is not any local bus service in town. For Hardwick residents, the nearest Vermont Transit sites are St. Johnsbury, Waterbury, and Montpelier.

#### **Human services transportation**

Rural Community Transport (RCT) provides demand response service to Lamoille, Caledonia, and Orleans County. They essentially co-mingle riders of various funding sources to bring them to their destinations.

Numerous human-service organizations in Hardwick currently provide programs that include Hardwick residents. Most of the transportation is provided through contracts with RCT. The Elderly and Disabled Persons Transportation Program provides funding for the transport of persons over 60 and/or

persons with disabilities. Various human services agencies in the county, including Vocational Rehabilitation, Council on Aging, Meals on Wheels, Lamoille County Mental Health, and Out and About Adult Day Center, assist their clients in accessing these funds.

### Regional transportation planning

The Northeastern Vermont Development Association (NVDA) Regional Plan contains transportation goals and policies that will provide the basis for planning for future transportation needs in Caledonia, Orleans and Essex Counties. The plan was recently revised in 2013. ([www.nvda.net](http://www.nvda.net))

The NVDA Regional Transportation Planning Program is currently coordinating transportation-planning issues for the counties. In the 1990s, a NVDA Transportation Advisory Committee (NVDA-TAC) was formed. The NVDA-TAC is comprised of appointed representatives from each town in the county and a member of the NVDA Board of Directors. The purpose of the NVDA-TAC is to provide recommendations regarding regional transportation needs and concerns to the NVDA Board of Directors and the Vermont Agency of Transportation. The NVDA-TAC serves as the eyes, ears and voice of local communities in the regional transportation planning effort.

Benefits to Hardwick of this regional effort include:

- 1) More local control of regional Transportation Planning & Funding
- 2) Greater eligibility for Federal Funds
- 3) Eligibility to attach additional local element in the region's annual work plan, and
- 4) Local technical assistance on transportation issues.

### Goals, Policies, & Recommendations

#### GOALS

##### Highways

- The town highway system should be safe and efficient for vehicular and non-vehicular use, as appropriate, and be maintained in a cost-effective manner.

##### Recreation & Non-vehicular

- Pedestrian and non-vehicular transportation networks should be safe and conveniently located to encourage their use.

##### Transportation services

- To support efforts to provide regional public transportation services for the general public and special transportation services for those who require assistance.

#### POLICIES

##### Highways

- Major roadways, especially Routes 14, 15, and 16 should have limited road accesses to allow for smooth travel into and out of town.
- New road and driveway accesses should have a suitable site distance so as to not create blind or hidden driveways.
- Any new or upgraded roads should be constructed to town road standards.
- Land use and development activity must not adversely impact traffic safety and the condition of town roads and rights of way.
- Hardwick should adopt a Complete Streets philosophy that includes universal design for accessibility.

##### Recreation and non-vehicular

- Hardwick supports the efforts of the many private and non-profit groups that provide recreational opportunities to residents and visitors.
- The town should start planning for trailhead connections to the Lamoille Valley Rail Trail.

##### Transportation services

- Hardwick supports efforts to provide transportation services to assist elderly and disabled residents who wish to remain in their homes.



- Carpooling and vanpooling by local commuters to reduce transportation costs and impacts is encouraged.
- Hardwick supports the use of bio-fuels.

**ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION**

Highways

- The Town should assess road and bridge conditions every three years to establish maintenance and repair priorities.
- The Select Board should update road and bridge standards as well as policies to regulate the acceptance of private roads.
- The Planning Commission should review the traffic speed survey (completed in 2012) and research options for traffic calming where necessary.
- The Select Board should seek funding to study multimodal transportation, including bicyclists and pedestrians in the downtown arteries.
- The Town should conduct a walkability audit.
- The Select Board shall continue to seek funding to improve and extend sidewalks.
- Through the traffic ordinance, the town should address truck parking and seek opportunities to increase downtown parking.

Transportation services

- Hardwick should continue to support the non-profit services provided at the regional level, which provides public transit and other services.
- The Select Board should continue to appoint a municipal representative to the Northeastern Vermont Transportation Advisory Committee (NVTAC) to coordinate transportation planning, road maintenance and improvements with adjoining towns, and to ensure that the interests of the town are adequately addressed by the region and state.
- Hardwick should consider using bio-fuels wherever economically possible. This can be through use in school buses and other municipal vehicles.

Overall

- The Planning Commission should review all 'Act 250' applications for its impact on transportation in Hardwick. Where an application is determined to not conform to this chapter or any goal or policy, the Planning Commission should participate in the 'Act 250' process in order to ensure that the concerns of the town are addressed.

## Section 4: Hardwick's Plan for Tomorrow

### A. LAND USE & DEVELOPMENT

The land use pattern of any community is typically the result of several influences: physical constraints of the land, historical development patterns, transportation routes, economic influences, and personal preferences. This pattern of uses and development give a community character and serve as the foundation for future development.

#### Current land use pattern

The development pattern of Hardwick is typical of the communities throughout northern Vermont. This pattern is one of traditional New England settlement with compact village centers surrounded by agricultural and forest lands. The villages of Hardwick and East Hardwick, both located along the Lamoille River, serve as the activity centers of the community with community services, commercial and industrial activity, and higher density residential development. Both of these areas were historically mill sites and both benefited by having direct access to the railroad. These historic centers also maintain much of their historic character with many older buildings having been renovated. This rich concentration of historic resources is reflected in the fact that five historic districts have been designated within the Town of Hardwick.

The Lamoille River enters the town in the northeast and exits in the southwest. In addition to the productive soils found in the flood plains along the bottom, the valley is also home to important transportation corridors providing access to the community via state highways.

Areas such as Bunker Hill, Bridgman Hill, Center Road, Hopkins Hill, Hardwick Street, and Ward Hill all have their own concentrations of agricultural land uses. Low density scattered residential development exists throughout these areas with densities highest closer to village centers. The community's higher elevations and steep slopes are typically forested - much of which is covered with mixed hardwoods, with stands of softwood dominating the highest ground. Most of this forestland is in medium sized blocks from 100 to 500 acres and serve as private woodlots with some commercial harvesting. In addition to wildlife, recreational and economic benefits, these forestlands provide the backdrop for the seasonal display of color that dominates the landscape every fall.

Thus, a generalization of the overall Character of Hardwick is that of an economically diverse community that serves as The Gateway to the Northeast Kingdom. Hardwickians take pride in their heritage of traditional Vermont skills such as farming while also valuing and protecting the scenic beauty of the area hillsides and waterways, areas which most citizens utilize for their recreational activities. Hardwick is known for its "neighbor helping neighbor" philosophy and its intergenerational collaboration has created a network of knowledge sharing throughout the community. Hardwick serves as the center of education and culture for the area, as witnessed by the presence of Hazen Union High School, the Judevine Memorial library, and the rejuvenated performance space, The Hardwick Town House. Hardwickians recognize that all members of their community make significant contributions to its character and thus show continued support for housing for all income ranges, including affordable and workforce housing, in order to maintain the economic diversity of its neighborhoods.

It is this hierarchy of land use activity, in combination with contrasting open and forested land, that provides the essential character of Hardwick and it is this pattern and character of development that the community wishes to maintain into the future.

#### Future land use districts

In order to achieve the goals of this town plan, the Town of Hardwick is divided into seven districts with two overlay districts. These districts include: Central Business District, Village Neighborhood, Highway Mixed Use, Compact Residential, Industrial, Rural Residential, and Forest

Reserve, as well as the two overlay districts of Flood Hazard Area and Wellhead Protection Area. The plan attempts to classify the town into various districts based on current land uses, characteristics identified in earlier chapters, conversations with neighbors and residents, and by using common sense.

Central Business District

The Character of the Central Business Districts in Hardwick and East Hardwick differ greatly. East Hardwick has seen a decline in its business activity since the end of the 19th century and its CBD, spread along both sides of Main Street, is almost exclusively comprised of single and multi-family residences. On the other hand, Hardwick Village’s CBD which lies along the Lamoille River and the intersections of State Highway 14 and 15 remained active throughout the 20th century and has experienced revitalization in the 21st, thanks in part to the localvore movement. This preference for local/Vermont owned businesses has made Hardwick the area’s Market Destination for both commerce and entertainment. Much of what has been achieved is due to the Hardwick’s success in attracting grant funds from outside institutions and much more remains to be done to maximize the benefits of the CBD’s interrelationship of the Lamoille River, community space, and businesses in this walkable downtown.

- Purpose. The Central Business District is intended to support a compact mix of commercial, professional, civic, and residential uses in Hardwick’s traditional downtown in a manner that maintains and enhances the area’s historic character and economic vitality.
- Present Land Uses. This area already supports the mix of uses desired in the plan. High density residential, commercial, and civic uses are common throughout the area.
- Future Land Uses. The district should continue to be used as described above. One issue with future land use in this district lies with vacancies in a couple older of buildings. Though few, these buildings are in conspicuous locations which challenge the vibrancy of the area. Continued development of new shops and restaurants will enhance the appeal of the area.

Village Neighborhood

The Character of the Village Neighborhood District is best described as residential homes that represent a significant historical architectural resource. The district is very walkable in that its streets have low traffic volumes and that it lies adjacent to the Central Business District and the excellent recreational resources of Hardwick Lake and the surrounding wooded hillsides.

- Purpose. This district is intended to provide for high density residential development and appropriate non-residential uses in existing neighborhoods located close to Hardwick’s traditional downtown in a manner that maintains historic settlement patterns and streetscapes.
- Present Land Uses. This area is currently used for residential, commercial, and public uses (including Hazen Union and Hardwick Health Center). Most of these buildings continue to have significant historic value.
- Future Land Uses. The district should continue to be used as described above. Any development or redevelopment in this area should respect the historic character of the neighborhood in which it is located. Improvements in pedestrian infrastructure would help connect this area to the Central Business District and Highway Mixed Use District.

Highway Mixed Use District

The Character of the Highway Mixed Use District is by its very nature varied. It serves as an important part of Hardwick’s identity as a Market Destination and as a location for light industry, a well-recognized anchor to future economic growth.

- Purpose. The Highway Mixed Use District is proposed to allow automobile-oriented businesses and other compatible uses along major travel corridors contiguous to the historic village centers, while maintaining a safe efficient traffic flow.

- Present Land Uses. This area already supports a mix of uses including commercial, light industrial, and residential uses.
- Future Land Uses. The district should continue to be used as described above. A more balanced mix of residential and other uses would improve the vibrancy of the area. Improved pedestrian networks would help connect these areas to the Village Neighborhood areas and Central Business District.

#### Compact Residential

The Character of the Compact Residential District is best described as residential homes that represent a significant historical architectural resource. The districts are very walkable in that their streets have low traffic volumes and that they lie adjacent to the recreational resources of the surrounding wooded hillsides

- Purpose. The purpose of the Compact Residential District is to provide moderate to high density residential development and appropriate non-residential uses in predominantly built-up areas within and surrounding the town's village centers.
- Present Land Uses. This area is currently used primarily for residential uses, but agriculture and commercial operations are also common.
- Future Land Uses. The district should continue to be used as described above. This area is expected to accommodate much of the future residential growth in the Town of Hardwick. The issues with future land use in this district lie with the amount and scale of development. Development must respect the environmental and physical constraints that exist on the site including slopes, soils, and wildlife habitat.

#### Industrial

The Character of the Industrial District is one of light industry and small manufacturing. Hardwickians recognize that these businesses provide the basis for future economic growth, but state a preference for local/Vermont owned businesses in the belief that they often contribute much more to the community than out-of-state corporate businesses do. Many businesses in the Industrial District were created thanks to Hardwick's success in attracting grant and investment start-up funding.

- Purpose. The Industrial District is intended to encourage a variety of industrial, manufacturing, and appropriate commercial uses while protecting such uses from incompatible residential uses in locations served by municipal water and sewer and good highway access
- Present Land Uses. This area is exclusively industrial.
- Future Land Uses. The district should continue to be used as described above.

#### Rural Residential

The Character of the Rural Residential District is one that balances excellent recreational resources, historic architectural resources, and the revitalized agricultural economy comprised of traditional farming and value-added agri-business.

- Purpose. The purpose of the Rural Residential District is to promote agriculture, forestry and low to moderate density residential development in areas well served by public roads but lacking municipal water and sewer. To ensure the protection of environmental resources and maintaining open space, the clustering of new development is strongly encouraged.
- Present Land Uses. Due to the size and extent of this district, many land uses exist within its borders. This area is currently used for agriculture, forestry, and earth extraction but also residential and commercial uses. Most developed lands are within a few hundred feet of the existing road network.
- Future Land Uses. The district should continue to be used as described above. The issues with future land use in this district lie with the amount and scale of development. Development must respect the environmental and physical constraints that exist on the site including slopes, soils, and wildlife habitat. Preservation of open space for continued use in forestry and agriculture is desired as well.

Forest Reserve

The Character of the Forest Reserve is self-evident.

- Purpose. The purpose of the Forest Reserve District is to protect significant forest resources and limit development to low densities in areas with steep slopes, shallow soils, unique or fragile resources, significant wildlife habitat, and poor access to town roads and community facilities and services.
- Present Land Uses. This area is currently used for forestry and wildlife habitat. A limited amount of agriculture and residential development also exists.
- Future Land Uses. The district should continue to be used for forestry and wildlife habitat as well as limited agriculture and residential development.

Overlay Districts

Other overlay districts include the following:

- Flood Hazard District. This area was defined by FEMA in order to protect the safety and welfare of residents and to prevent public and private economic losses resulting from floods.
- Wellhead Protection District. Three areas have been identified as regions that provide water for public wells including Hardwick’s well on Wolcott Street, East Hardwick’s well on Ward Hill, and Greensboro Bend’s well in the northeast corner of town.

**Timing and intensity of growth**

Future development in Hardwick should be timed so that the demands placed on community services will not result in them being overburdened. The Town has a responsibility to its taxpayers and residents to continue to provide the highest level of service while keeping costs under control. Future development - both residential and non-residential - should be encouraged in a manner that is sensitive to this responsibility.

**Implementing the land use plan**

The two most common land use planning tools used in Vermont are zoning bylaws and subdivision regulations. Both of these are effective tools to implement many of the goals and objectives of land use plans. Hardwick has adopted both of these tools and combined them into a Unified Development Bylaw.

~~Zoning has four purposes as defined in the statutes (summarized from 4401(b)(1)): To regulate the uses of land; to regulate the dimensions, construction, repair, and removal of structures; to establish dimensions of land, areas, yards and distances; and to set densities of population and intensity of use. Zoning, therefore, regulates what you can build and how you can use your land. Restrictions can be very minor (e.g. you can't build primary structures within 10 feet of your property line) or they can be very strict (e.g. what color can you paint your house). Each town decides the degree of regulation they are comfortable with when the rules are developed.~~

Hardwick’s zoning was originally adopted in 1973. The bylaws have amended ~~twice-four times~~ since 2002 to bring them up to date with changing state laws. Permit activity has been fairly steady over the past decade (see Figure 5). The number of permits issued annually is generally between ~~80 and 100~~ ~~40 and 50~~ and the number of new houses is about ~~40 to 155~~ ~~to 7~~.

~~Subdivision regulations apply to the creation of new lots. The size, shape, location, and density of building lots will determine the pattern of development. Many times, towns use zoning bylaws to control growth when subdivision regulations would be more effective. When residents talk about sprawl and loss of agricultural land to development, they are generally discussing subdivision issues. One commonly discussed solution is clustering of houses to protect open space. To cluster housing, though, the developer must first cluster the lots. When lots are created under subdivision regulations, minimum lot sizes and minimum road frontage are established based on zoning. Having a 2-acre minimum lot size~~

~~or 5 acre or 10 or whether new lots need 75, 150 or 250 feet of road frontage are all determined when lots are created in subdivision regulations.~~

~~The other important avenue for implementing a land use plan is through non-regulatory means such as purchase of development rights and purchases of property. This is useful in areas where severe restrictions would need to be placed on a property in order to implement the plan. If a large area was identified for preservation, for instance, it may be suggested that no development should be allowed. If the Town wanted to implement this through regulations it would need strict zoning which would probably constitute a taking of property as defined in the U.S. Constitution. The purchase of development rights and purchase of property would be a more appropriate option in this case. Purchase of development rights and property and the role of conservation commissions were discussed fully in Land Resources.~~

## Goals, Policies, and Recommendations

~~This section will set goals and identify possible actions but will not mandate solutions. Finding solutions that satisfy all interests will be difficult, and will require compromise. While compromise is necessary, there may be more options available than many people realize.~~

### GOAL

- Maintain Hardwick's present patterns of land use: dense residential and commercial uses concentrated in Hardwick village and East Hardwick and sparsely developed agricultural and forest land outside these village centers, with a rural and natural skyline.

The Town has developed the following policies in order to guide development in a manner consistent with the overall goals and objectives of this plan.

### POLICIES

- The clustering and/or siting of development is encouraged in order to replicate traditional patterns of development, to protect rural and scenic character, and to maintain contiguous tracts of resources and open land.
- The Flood Hazard district is intended to protect life and property within federally designated flood hazard areas. New construction should not occur within these areas and existing buildings should be flood proofed.
- Higher density residential developments should be located closer to major roadways and existing villages to improve emergency service response.
- Mixed-use developments are encouraged to allow commercial, business, and residential uses to be located near each other.
- The scale of new construction and buildings shall be in keeping with the development patterns of the immediate surround areas.
- Development in areas that require an extension of services, such as sidewalks, electricity, or water, shall be discouraged.
- Abandoned, unsafe and unsanitary lots should be remediated in order to improve public safety and facilitate adaptive reuse.

## ACTIONS & RECOMMENDATIONS FOR IMPLEMENTATION

- ~~The Town shall host a Charrette to more precisely define town character. Definition shall include specific context-sensitive guidance for new construction -- such as scale, intensity, building size and lot coverage -- within each zoning district, and within each discernable neighborhood.~~

- ~~• The Planning Commission should periodically review the existing zoning and subdivision regulations to ensure they are having the desired effect on land use.~~
- ~~• The Select Board should investigate policies and programs (including ordinances) that would facilitate the remediation of abandoned, toxic, hazardous or unsafe buildings or lots in order to improve public safety, adaptive reuse of historic structures and improve the availability of industrial sites.~~
- ~~• The Planning Commission should review all 'Act 250' applications for their compliance with the land use plan. Where the application is determined to not conform to this chapter or any goal or policy, the Planning Commission should participate in the 'Act 250' process in order to ensure the concerns of the Town are addressed.~~
- When subdividing existing lots or building new structures, it is important to maintain the character of residential areas as regards to historic layout and green space.
- ~~• Explore the use of brownfields reuse initiative grants and loans to reclaim abandoned, underutilized and toxic sites.~~
- ~~• The Planning Commission and Select Board shall formulate ways for the Town to recognize and support exploratory committees that will research projects in order to develop new industries in Hardwick.~~

## **B. IMPLEMENTATION**

Each of the chapters in this town plan established a set of recommendations to accomplish the goals and objectives. With more than 65 recommendations throughout this plan, there is no way each and every task can be completed. Over any time period, money or resources may become available to tackle an issue and the policies and recommendations will be in place to take advantage of them.

Implementation can take place in big and small steps. Creating a broadband committee and bringing highspeed internet into all parts of town would be a large undertaking and would take an investment in time and energy from local residents. Other chapter recommendations are small and many can be undertaken over the course of a few years with little effort.

With that in mind, the Planning Commission would like to recommend a few projects for the Select Board and Planning Commission to accomplish in the next five years. In this way this plan will hopefully lead to some direct actions and, in this way, take the town a step closer to their goals for the future.

### **Recommended actions for implementation of the town plan**

Over the next five years the town, Planning Commission, and Select Board should take action to implement parts of this plan:

#### Select Board

One of the Select Board's primary responsibilities is the road system. Roads are an important factor in municipal taxes and help determine where future development is possible. Having clear highway policies helps the Select Board decide on reclassification of private roads, what standards they need to be built to, and a capital plan for improvements. Therefore, it is recommended that within the next five years-

- ~~The Select Board should form a telecommunications committee to address the telecommunication issues in town including the lack of cellular coverage and lack of broadband coverage for many rural areas.~~
- ~~The Select Board and Planning Commission should pursue Downtown Designation for the Hardwick Village area.~~
- ~~The Select Board, with input and assistance from the Planning Commission, should identify new areas for an industrial park.~~

Planning Commission

~~In addition to working with other groups and boards in town the Planning Commission:~~

- ~~➤ should spearhead efforts to create a Hardwick Conservation Commission to address the natural resource issues discussed in this plan.~~
- ~~➤ should develop a flood resilience plan immediately upon the adoption of this plan.~~
- ~~➤ should pursue funding to develop a strategic plan for economic development in Hardwick.~~
- ~~➤ should pursue funds to develop a comprehensive recreation plan.~~

Other groups or individuals

~~Other groups were mentioned from time to time throughout this plan. Each of these groups should do their part to accomplish their piece of the overall plan. The Planning Commission is always available for guidance and assistance. These include:~~

- ~~➤ Hardwick Historical Society (Historic, Scenic, & Archeological Resources)~~
- ~~➤ Lamoille Housing Partnership (Housing)~~
- ~~➤ Hardwick Area Chamber of Commerce (Economic Development)~~
- ~~➤ Broadband committee – if formed (Information Technology and Telecommunications)~~
- ~~➤ HEART (Energy)~~
- ~~➤ School Boards (Education)~~
- ~~➤ Conservation Commission – if formed (Natural Resource Chapters)~~

**How the plan relates to the Regional Plan and adjacent municipalities**

Hardwick shares borders with Greensboro to the north, Walden to the east, Woodbury to the south, Wolcott and a small portion of Elmore to the west. Additionally, Stannard and Cabot meet Hardwick at corners.

Most of the surrounding towns have an agricultural base, many commuters, village centers with mom and pop stores or gas stations, and a significant number of self-employed trades people and other small enterprises. The Cabot Creamery is the only major employer in the adjacent towns.

One major land use goal of this plan is to retain agricultural and forest potential while preserving options for landowners. This is a goal shared widely in the region. Hardwick's goal of creating employment opportunities for local people and expanding goods and services available in Hardwick should benefit surrounding towns.

The Hardwick Planning Commission has a goal of increasing communication and exchange of ideas and strategies with neighboring municipalities. No negative impacts or incompatible development is anticipated as a result of the actions of this plan.

Regional Plan

Nothing in the Hardwick Town Plan ~~2014-2019~~ is expected to be in conflict with the regional plan or will have a negative effect on any future implementation of the regional land use plan. The Hardwick Planning Commission is willing to work with Northeastern Vermont Development Association to address any concerns they may have.



## Appendix A: Hardwick's Tools and Options for Plan Implementation

A good plan presents and explores the full range of options available to its citizens. This section explains all the options for plan implementation and provides insight into how the specific strategies for achieving Hardwick's goals were developed.

### IMPLEMENTATION OPTIONS

#### Non-regulatory

##### *Planning initiatives and outreach activities*

- **Monitor demographic changes:** Towns should monitor existing conditions and adopt or amend regulations as necessary to guide growth in manner that will not negatively affect facilities and services or other goals outlined in this plan. For example, towns must ensure adequate facilities are available for educators. With the school enrollment declining or leveling off, the Planning Commission should monitor changes to see if the trend continues or reverses.
- **Encourage diversity:** Towns should maintain an open and diverse community, welcoming to various ages, ethnic groups, races, religions, family types, and social and economic classes. Having an open and diverse community is the responsibility of everyone in town. While the Select Board, Planning Commission and other groups need to be aware of how their decisions may impact a diverse range of residents, it is the community that will determine if these different groups feel welcome.
- **Inventory and map land-based assets:** Towns, for example, may inventory their scenic resources and establish policies on the best strategy to protect them. The current Hardwick plan identifies scenic areas but no formal surveys have been conducted to identify others such as scenic roads, scenic ridgelines, or open space. Towns also should identify areas where earth resources are located. The maps included with this plan provide a good basis for understanding the location of earth resources in town. Much of the information, unfortunately, is based on old geologic surveys and a more comprehensive inventory to identify the quantities and quality of materials would be helpful.
- **Identify historic districts and structures and, where appropriate, record them on the state survey or nominate them for the National Register:** Hardwick already has eight districts recognized with two of these on the National Register. It is unlikely there are any additional historic districts in town although some on the state survey could be nominated to the National Register. Hardwick already has approximately 570 structures inventoried on the state Historic Sites and Structures Survey and two of these on the National Register. While this is a very comprehensive inventory, it is likely that a few buildings were missed. The town could investigate adding municipal structures to the National Register including the Memorial Building, Railroad Depot, Hardwick Town House, and Jeudevine Memorial Library.
- **Identify and plan for the conservation of agricultural soils:** An examination of the location of the roads in Hardwick with respect to the location of primary agricultural soils resources shows a not so surprising correlation. The roads were constructed to connect farms in the past so these routes tend to follow the best agricultural lands in town. This presents a dilemma for Hardwick. Continued rural development along our roads will result in the losses of our best agricultural soils in many cases. Hardwick should identify rural areas that are away from the prime agricultural soils where development will be permitted while at the same time conserving our best farmland for future use.
- **Provide education and outreach on important issues:** Towns, for example, may be able to provide guidance to local property owners in the restoration and use of their historic structures by directing them to the Vermont Division of Historic Preservation for technical assistance. The

Town can also help private property owners by participating in programs such as the Designated Downtown Program and Village Center Designation (see below), or by connecting property owners with other resources to help make improvements happen. Hardwick's Town Manager works to build these types of relationships. Towns also can educate land owners on how to be good stewards of their land and how to protect and preserve wildlife habitat. This is generally the role of a conservation commission, but Hardwick does not have one. There are no active education programs to promote land stewardship. Hardwick does have an active Energy Committee (see below), which works to reduce energy costs and associated environmental impacts.

- **Solicit public opinion:** Towns should determine local opinions (through surveys or hearings) to guide public policy on controversial matters. Wind towers and telecommunication towers have continued to be hot topics in Act 250 and Section 248 (wind tower) hearings. Having citizen input on what is acceptable in Hardwick will help developers and state reviewers determine compliance with local plans and policies. Public input is crucial to the planning for commercial wind farms. This plan does not, at this time, advocate or oppose commercial wind farms, although it recognizes that certain areas are likely inappropriate due to visual and recreational conflicts. The Planning Commission, Select Board, and interested citizens should seriously investigate this question before a proposal arrives for consideration. The results of the study could steer projects towards Hardwick or away depending on the Town's opinion on the towers.
- **Conduct an economic assessment and develop a strategic plan for economic development:** These strategic plans will address opportunities and threats specific to each community. Hardwick does not have a strategic economic development plan.
- **Plan for flood resilience:** The Town of Hardwick must develop a plan for flood resilience in accordance with State statute. This work should include a detailed plan for the flood hazard areas in town - especially along the Lamoille River. Through this plan, Hardwick can determine appropriate uses for the hazard areas including locations for recreational facilities, open space, and agriculture. The purpose of the plan would be to generate public and private benefit from the hazardous area and protect the public from loss of property and life. Additionally, this flood hazard area plan should address buffers for the river and other water quality solutions.
- **Support quality educational services in town:** Towns should ensure schools are teaching skills that employers are looking for and connect local businesses with secondary and post-secondary education providers to ensure the needs of local employers can be met. The primary groups responsible for providing educational services are the School Boards (Hardwick and HUSD). These boards need to work with the principals and superintendents to continue to advance their own action plans to ensure each student is given the attention needed to achieve success.

#### Programs and Incentives

- **Form a local Historic organization:** Hardwick has the private non-profit Hardwick Historical Society Inc. The Planning Commission and Historical Society should plan to work cooperatively into the future to include the goals and objectives of the society in any town plan updates. This will improve chances of funding for projects that the society would like and demonstrates the town's commitment to the work they do. Towns also can compile a history of their town including oral and written histories. The Hardwick Historical Society is currently starting such an effort. This will take many years and may require funding. Other relevant activities include the placement of historical markers around town, and the display of historic items. The Hardwick Historical Society already engages in many of these types of activities including operating a museum out of the Hardwick Railroad Depot. The Historical Society leases the restored Hardwick Railroad Depot for use as a museum and to house historic items. When renovations are complete there will be a temperature controlled space for items.
- **Form a Conservation Commission:** Vermont passed the legislation enabling municipal Conservation Commissions in 1997. The major goal is to establish community responsibility for its natural resources. Conservation Commissions have no regulatory power, but may advise the towns, Planning Commission, and residents and undertake diverse activities to foster wise use

of the town's natural resources. Back as far as 1990, the Hardwick Town Plan has strongly recommended the creation of a conservation commission to work on natural resource issues.

- **Form an Energy Committee to educate and assist residents on energy efficiency and conservation:** This group informs decision makers and educates the public on energy issues including climate change. The Hardwick Energy Action Resource Team (HEART) has been active since 2006.
- **Form a Telecommunications Committee:** This group could investigate options to bring mobile and point telecommunication opportunities to town.
- **Form a Housing Commission or Housing Task Force:** Housing commission duties may include: conducting inventories of the current housing stock to identify housing gaps for households of different income groups or with special needs; review existing zoning and subdivision regulations, ordinances, building codes, and local development review process and making recommendations to facilitate the development of affordable housing under local regulations; assisting local review boards and the Act 250 district commission by providing testimony on the housing needs of the town; cooperating with local officials on matters affecting housing resources of the community; conducting outreach efforts to educate the public to counteract public resistance to affordable housing; collaborating with non-profit housing organizations, governmental agencies, developers, and builders in pursuing options to meet local housing needs. Hardwick does not have a Housing Commission.
- **Form a Housing Authority:** Housing authorities can be created by the Selectboard at any time through a resolution if the body finds that unsanitary or unsafe inhabited dwellings exist in the municipality or if there is a shortage of dwellings for low income and elderly persons at rents they can afford. There are less than a dozen of these authorities in the state and all are in our larger cities. Hardwick does not have a Housing Authority.
- **Create public/private partnerships to address housing needs:** Working with organizations like Lamoille Housing Partnership (LHP) Housing Vermont and other groups is an effective way of accomplishing various housing objectives. LHP in Morrisville is a regional, non-profit organization serving residents of Hardwick in funding, managing and developing attractive, affordable housing opportunities. LHP develops projects which are financially feasible, meet perceived or real social needs, and serve community interests. There are several LHP projects in Hardwick at this time including Evergreen Manor Mobile Home Park, the Bemis Block, Highland Hills Apartments, Cherry Street Apartments, Hardwick Housing, and Maple Street Apartments.
- **Develop housing to meet the needs of residents who have special needs:** Towns can build and manage their own special needs housing through a housing authority, but most often it is in conjunction with another organization. Hardwick has some quality special needs and affordable housing projects in town. Family housing does appear to be lacking although a full housing needs assessment may be needed to determine the extent.
- **Work with Efficiency Vermont:** This utility offers a wide variety of services, incentives, and advice on energy conservation for small users.
- **Pursue Downtown Designation and Village Center Designation:** Designation allows owners of private properties used for commercial purposes to apply for tax credits for façade and code improvements and other benefits. Hardwick has already received Village Center designation for the Hardwick Village area and could apply for Village Center Designation in East Hardwick. Hardwick Village could benefit more from Downtown Designation which will make the area eligible for additional benefits and help to promote economic development. This program also allows towns to establish Growth Centers to identify areas where economic development is supported and encouraged. Hardwick does not have a Designated Downtown or Growth Center.
- **Develop a Tax Stabilization program:** Select Boards can develop capital programs to help facilitate improvements to structures, including historic structures. Many property owners can't or won't make critical investments or improvements to structures because it will lead to increased property taxes. Although tax stabilizations can only apply to municipal taxes (not school taxes), stabilizing these costs can make the difference between improving the

appearance of an entire neighborhood and continuing to have a rundown appearance. Hardwick has a tax stabilization program.

- **Establish a Revolving Loan Fund:** Towns may secure funds to start a revolving loan fund to provide low interest loans to businesses looking to get established or expand in town. Hardwick has a revolving loan fund.
- **Establish a Chamber of Commerce to market the area:** Marketing inside and outside the region and hosting events helps encourage the spending of money locally and bring in new customers from other areas. The Hardwick Area Chamber of Commerce is very active in the area and is an excellent resource for the Town to coordinate efforts with.
- **Work with regional and statewide partners to promote economic development:** Partners include Regional Development Corporations (Northeast Vermont Development Association or NVDA), Vermont Economic Development Authority (VEDA), Economic Development Council of Northern Vermont, Vermont Council on Rural Development (VCRD), and Northern Vermont Resource Conservation and Development (NV RC&D), Green Mountain Tech & Career Center, the Department of Employment and Training, among others. Hardwick works a great deal with NVDA but could work more pro-actively with its other partners.
- **Encourage participation in the Use Value Appraisal program:** The current use or Use Value Appraisal (UVA) Program has grown to be quite popular among Hardwick property owners. In 2001 there were 95 parcels and a total of 11,642 acres enrolled in the program (46.8 percent of the entire town). As of 1/1/2014, the number of parcels in Current Use has increased to 101 and the number of acres enrolled had increased to 12,004 acres. UVA may be used for either agricultural or forest land but in the case of Hardwick a majority of the properties are likely to be in agriculture.
- **Support the purchase of development rights on properties with adequate amounts of soil resources to support farming or forestry:** The purchase of development rights is a popular option for many towns looking to conserve farmland for future generations. Instead of using regulations to limit development, towns work with organizations to purchase the development rights from farmers so the farmers are adequately compensated for their loss of value. The most well-known group involved in the purchase of development rights is the Vermont Land Trust. Hardwick should consider forming a conservation commission to purchase development rights on their own. In that way the town would own the development rights instead of a non-profit organization. The money to purchase properties or development rights can come from grants and funding institutions around the state or the town at Town Meeting Day. At this time the Vermont Land Trust owns the rights to a number of farms in town.
- **Support the purchase of lands containing rare, threatened and endangered species:** Due to their fragile nature, these types of areas need to be protected from development on or near the site. In order to protect fragile areas into the future, Hardwick needs to ensure that no development, logging, agriculture, and sometimes even hiking occurs in these areas. This level of control generally requires public ownership to ensure property owners are not unduly restricted from using their land.
- **Support the efforts of organizations that provide transportation services or special recreation opportunities:** Rural communities do not generally provide services such as senior and disabled transportation; these are typically provided by non-profit organizations. It is important to support these organizations whenever possible. Similarly, towns do not typically provide town-wide or regional trail networks for various recreational opportunities. Whether it is hiking, biking, cross country skiing, snow mobiling, or ATVs, towns can support these efforts where municipal lands are concerned or where the town can provide some administrative or financial support. In Hardwick, RCT handles the provision of special transportation needs. Hardwick has many active recreation groups that can provide support as well.

### ***Administration & Infrastructure***

- **Invest in public improvements:** This can include amenities, such as a new park, or improvements to existing facilities, such as an upgrade to water or sewer plant. Hardwick has many small and mid-sized plans in place now for improvements to existing facilities. The biggest at this time involve improvements to the water and water infrastructure. Towns can also develop infrastructure to help with alternative transportation and carpooling. Having safe places for carpoolers to park can be important to ensure use and having bike racks in places around the village are just a few ways that towns can encourage other modes of transportation.
- **Adopt capital budgets:** Capital budgets are planning tools to allow communities to prioritize capital expenditures over a specific period of time. Capital expenditures are generally purchases of equipment or land over a set value (e.g. \$5,000) and with a certain life span (at least 3 years). Capital budgets can be used to develop reserve funds (also known as sinking funds) or to impose impact fees. Hardwick has a capital budget and program to plan for the purchase of highway and police vehicles.
- **Assess road, bridge, and culvert conditions at least every three years:** Towns which conduct these assessments are eligible for additional matching funds from the state for capital improvements and highway funding. Hardwick has recently (2013) conducted a comprehensive assessment of the town roads. This should be reassessed and updated every few years.
- **Maintain a reliable supply of sand and gravel for road maintenance:** A 100-year supply is recommended by the state. The Town of Hardwick has purchased the rights to a gravel pit. The Select Board is currently assessing the pit to determine the quantity and quality of materials presently remaining. It has been suggested by the Planning Commission that the Select Board investigate other municipal properties (including those owned by Hardwick Electric Department) to identify additional sand and gravel resources.
- **Appoint representatives to the regional Transportation Advisory Committee:** Local and regional transportation priorities are determined each year through comments and recommendations made to the State Department of Transportation. Hardwick has had representation on the NVDA-TAC for many years.
- **Support non-profit and volunteer organizations in providing needed social services:** The town and state do not provide many of the services needed on a daily basis by residents of town. Many of these organizations are supported on Town Meeting Day through annual appropriations.
- **Hire an economic development coordinator:** This individual can coordinate economic development opportunities, write grants, and assist in other programs. Applying for Downtown Designation or a Growth Center sometimes makes a position of the type necessary. Hardwick does not have an economic development coordinator although the Town Manager position is heavily involved in economic development in town.
- **Work with the regional solid waste district to ensure safe and easy disposal of household hazardous wastes:** Common household hazardous wastes can have a profound impact on water quality if not disposed of properly. Having easy and safe ways to dispose of these materials prevents accidents and backyard dumping of these materials. Although Central Vermont Solid Waste Management District has special pickup days for household hazardous waste, it was mentioned in public hearings that additional opportunities to dispose of materials would be helpful.
- **Work with local emergency service providers to ensure communications coverage is adequate in the entire town:** Emergency communications are another important aspect of telecommunications. Where coverage is not good, the town can work to develop and implement an emergency communications plan to identify the best locations for new equipment. This plan can also help coordinate communications with neighboring emergency providers. Hardwick has had problems with emergency communications for some time. There is hope that the emergency services will be able to co-locate with a cellular company at some point in the future.

- **Renew franchise agreements with cable companies and negotiate for greater coverage or other benefits:** With Hardwick's franchise set for renewal in 2008, the Selectboard and Town Manager should investigate how much leverage they wield in this renewal and demand a plan for full cable coverage over the next five to ten years.

## Regulatory Implementation

### Zoning and Subdivision Regulations

Zoning and subdivision regulation are the most prevalent form of local regulatory implementation in Vermont.

Hardwick has zoning and subdivision regulation. Having a coordinated review process where all conditional use and site plans are reviewed at once is important for making it an efficient process. Hardwick has a Development Review Board which hears all applications requiring public hearings. The town also has carefully developed rules to be as clear as possible for reviewers and applicants.

Zoning and subdivision regulations may be amended or adapted to achieve multiple objectives:

### Topography and Natural Resources

- **Limit or restrict development on steep slopes to maintain hillside stability:** Regulation of steep slopes is generally a local responsibility (regulated through local zoning bylaws). Hardwick currently prohibits development on slopes greater than 25% except to facilitate development on contiguous lands which is less than 25%.
- **Protect agricultural resources:** Zoning and subdivision regulations are less effective in protecting important land resource parcels than purchase of development rights, but are also far less expensive. These types of regulations can guide development to ensure certain goals are accomplished.
  - **Planned Unit Developments.** One valuable tool is Planned Unit Developments where developable lots are clustered to protect meadowland or primary agricultural soils. This type of flexible zoning tool allows the same number of developable lots as traditional subdivisions except that it also keeps the fields open and forests unfragmented. Hardwick already allows Planned Unit Developments within the zoning bylaws.
  - **Subdivision regulations.** Farmland is lost when it is subdivided rather than when it is developed. Working with developers at the time the parcels are subdivided helps leave large tracts open for continued use in agriculture. Hardwick's subdivision regulations do not have provisions to require developers to minimize impact on the agricultural resources.
  - **Agricultural Districts.** Establishing agricultural districts with lower residential densities is a good approach to manage growth in rural areas. Some towns have established densities in agricultural districts as low as one unit per 27 acres (the minimum threshold for the current use program). Agricultural districts also protect farming from incompatible land uses like residential housing. Hardwick does not have any agricultural districts. The Planning Commission should work with land owners interested in having their land included in an agricultural district.
- **Minimize impact on wildlife habitats.** Hardwick currently does not have any regulations to protect wildlife habitats except if a project is a planned unit development. There are a variety of zoning or subdivision tools that could be explored to discourage or prohibit development in these areas.
  - **Planned Unit Developments.** Lots could be clustered to protect wildlife habitats. This type of flexible zoning tool allows the same number of developable lots as traditional subdivisions except that it also keeps the forests unfragmented. Hardwick already allows Planned Unit Developments within the zoning bylaws but does not require the

use of them.

- Subdivision regulations. It is only a matter of time before a habitat is fragmented once lots are subdivided. Limiting subdivisions in these wildlife habitats is critical to maintaining long term connectivity. Working with developers at the time the parcels are subdivided helps leave large tracts open for continued use as wildlife habitat. Hardwick's subdivision regulations do not have provisions to require developers to minimize impact on the wildlife resources.
  - Overlay districts. Habitat overlay districts in the zoning can identify areas where development should avoid.
  - Large lot zoning. Large lot zoning can be used in areas that support the production of bear. Bears require large areas without intrusions by people as they tend to be solitary animals. Hardwick's bear habitat coincides with the forest reserve district with is a large lot (25 acre) zoning district.
- **Where large blocks of sensitive habitat exist establish districts in the land use plan to support the preservation:** Hardwick contains only two small areas where rare, threatened or endangered species are found. There is no need to establish districts to protect these very small areas.
  - **Establish regulations to ensure that any development in areas defined as containing rare, threatened and endangered species not have a negative impact on said species:** Hardwick has no regulations in place at this time to prevent development in the two areas containing rare, threatened or endangered species. The Planning Commission should consider changes to require that any development in these areas receive conditional use approval and that any approval in conditional upon no negative impacts on the species in question.
  - **Regulate the extraction of earth resources to minimize the impact on neighboring properties:** Earth resource extraction and/or processing activities have a high potential for becoming a substantial nuisance in the area where such activities are located. There is a potential for problems in any of the following areas: noise, dust and air pollution or radiation; surface and groundwater pollution, siltation or radiation; storage and disposal of waste materials, both solid and liquid; increased stormwater runoff, erosion and sedimentation; spoiling of the landscape and limited utility for subsequent uses of the site; decreased highway safety and increased municipal costs due to increased traffic and accelerated deterioration of highways and bridges attributed to the transportation activities generated by the earth resource operations; reduced property values because of primary or secondary impacts of the proposed earth resource operations. All these factors, single and together, may act to substantially depreciate land values in the immediate vicinity of such activities and the town in general. As a result of these potential problems, Hardwick has adopted specific regulations in the zoning bylaws to address these factors.
  - **Where substantial amounts of earth resources exist, consider establishing districts to protect extraction operations from incompatible land uses.** Hardwick currently does not have any special resource districts established.

#### *Water Resources and Water Quality*

- **Include storm water control measures in zoning bylaws:** Storm water control standards may be required by the Development Review Board for any conditional use application in Hardwick.
- **Adopt erosion control measures in zoning bylaws:** Erosion control standards may be required for any conditional use application and is mandatory in earth extraction operations in Hardwick.
- **Require identification of rivers and streams in zoning and subdivision applications:** Hardwick requires the location of all streams and rivers on any application.
- **Require setback and vegetative buffers to all streams and rivers:** Hardwick requires a minimum setback of 75 feet from all streams and rivers. In addition, a 25 foot buffer is required.

- **Require identification of lakes and ponds in zoning and subdivision applications:** Hardwick requires the location of all surface waters on any application.
- **Adopt shoreline districts in zoning to protect lakes and ponds:** Hardwick has not adopted any shoreline districts into the bylaws. These generally are applied to lakes that are greater than 20 acres in size (Hardwick Lake and Tuttle Pond).
- **Require setback and vegetative buffers to all lakes and ponds:** Hardwick requires a minimum setback of 75 feet and a buffer of 25 feet from all public lakes.
- **Towns should require identification of wetlands in zoning and subdivision applications:** Hardwick requires the location of wetlands on any application.
- **Towns should require setback and vegetative buffers to all wetlands:** Hardwick does not regulate wetlands and therefore does not require setbacks or buffers.
- **Towns may require identification of wellhead protection areas in zoning and subdivision applications:** In Hardwick, applicants are required to identify source protection areas in conditional use review.
- **Adopt wellhead protection districts in zoning for all municipal wells:** While not adopting a well head protection area district, Hardwick has adopted regulations to prohibit certain uses within designated source protection areas in town.

#### *Housing & Affordability*

- **Ensure that their zoning allows for a variety of types of housing:** Towns can do little to force property owners to build a variety of housing types. Zoning can certainly make it difficult or impossible to develop a variety of housing if the regulations prohibit such structures. Towns with zoning are required by statute to provide areas for mobile home parks and multi-family housing. Towns also cannot discriminate against mobile or modular homes. Hardwick meets all state requirements in the zoning and subdivision regulations.
- **Encourage more affordable housing through zoning:** The Vermont Land Use Planning Implementation Manual identifies 10 strategies for towns to use to encourage more affordable housing. Some of these include reducing minimum lot sizes, providing areas in town for high density (8 units per acre), allowing duplexes anywhere single family dwellings are allowed, allowing adaptive reuse of historic structures, and requiring clustering in rural subdivisions. Hardwick already allows almost all of the Manual's recommendations.
- **Provide incentives to affordable housing through their zoning:** This may include density bonuses for affordable housing projects, getting allocation priorities in water and wastewater hookups, or waivers to fees.
- **Require affordable housing in some projects:** Usually called "inclusionary zoning" towns have the power to require developers to build a certain percentage of their project as affordable housing. This practice is most common in areas where housing is very expensive and new construction is typically very exclusive. This has not been implemented in Hardwick.

**Prohibit construction of housing in hazardous locations:** The most common of these types of regulations is flood hazard regulations (see below). More recently, fluvial erosion hazard ordinances have also begun to be adopted in communities with rivers that are eroding. Any known hazard can be regulated to protect residents including fire prone areas (like in California), airport hazard districts, and earthquake zones. Hardwick has adopted flood hazard area regulations into the zoning bylaws.

#### *Historic Assets*

- **Establish policies describing the town's position on historic preservation in certain districts:** Town have many opinions on historic preservation ranging from "encouraging property owners to maintain their structures", to "requiring property owners to maintain the historic appearance of a structure" to "requiring full preservation of historic structures though the adoption of a historic design review district". Hardwick currently does not provide additional regulations to those property owners with historic structures. If significant losses of historic



value or if residents of a district would like additional protections in a certain district then Hardwick will need to decide how much oversight they want to impose.

- **Adopt zoning regulations to require development to be designed in character with the neighborhood:** There are two zoning tools where this can be applied- conditional use standards and design review. Hardwick already has adopted zoning and requires conditional use approval for certain uses. Hardwick does not have a discussion of ‘maintaining historic character’ in the regulations so design cannot be addressed in these applications. Design review is a more complex set of regulations that requires the adoption of architectural standards. They usually are adopted for only the highest value districts.
- **Allow for adaptive reuse of historical buildings:** Many older buildings no longer can be used for their initial intended purposes. Old barns may not be located on active farms any longer and granite sheds for an industry no longer active may offer challenges to the current owners. To avoid teardown of historic structures, zoning should provide flexibility in the reuse of these buildings. Hardwick has adopted standards in the zoning to allow for adaptive reuse of historic structures.

#### *Business and Industry*

- **Establish zoning rules to permit industrial development in locations that will not conflict with neighbors:** Towns should establish industrial districts to allow industry to develop without interfering with residential uses. Hardwick has an industrial district which coincides with the industrial park.
- **Establish zoning rules that allow for a broad range of uses in districts:** Many small industrial and commercial uses have only a limited impact on neighbors. Technology has made many of these uses quieter and safer than in the past and therefore towns can allow home businesses and industries where they would not have been able to before. Hardwick allows for home businesses and industries in most districts in town.
- **Ensure a fair and efficient permitting process:** The local permit process and administration by local officials convey a community’s attitude toward businesses and development. If good jobs are important to residents and the community wishes to encourage the development of businesses and industries, then the message should be clear. The process and requirements for local permits must be explicit and consistently applied.

#### *Visual Impacts*

- **Ensure sufficient guidance in regulating structure with significant visual impacts (e.g. telecommunication towers and junk cars):** In 2005 the planning commission reviewed the telecommunication tower regulations to ensure the rules were written in a manner to achieve the goals of the town. Another threat to scenic resources in town could be junk or junk cars. This is an issue that can be addressed through a junk ordinance adopted by the Selectboard. While there are many ways to word this ordinance, the Selectboard could consider, at a minimum, that junk and junk cars be screened from view.
- **Use subdivision and site plan review to address scenic impacts:** Hardwick has adopted subdivision regulations and has included site plan review standards in the conditional use standards. Within the forest reserve district, conditional use standards require developers to address scenic qualities and not to obstruct significant views.

#### *Energy*

- **Exempt or make special provisions for renewable energy structures:** As mentioned previously, any power generation equipment that hooks to the grid is exempt from local review already but many energy efficiency items are not. Solar hot water heaters and wind turbines that power a bank of batteries are examples of other equipment that towns can exempt of provided limited review of in zoning.

### *Public Safety*

- **Ensure emergency services access to properties and buildings:** Many towns have established regulations to ensure structures are accessible to emergency service vehicles and equipment. This may be a requirement in subdivision regulations that private roads meet certain minimum standards (presumably sufficient to meet fire vehicle requirements). Similarly, this could include driveway standards to allow emergency access as well. Commonly towns will also establish height requirements that do not exceed what can be accessed by a ladder truck. Hardwick has standards for private roads, driveways, and building heights.

### *Other Local Regulatory Options*

- **Impact fees:** An impact fee is a fee levied on new development to help mitigate its fiscal impacts on the community. It can be a deterrent to economic development so it needs to be applied carefully. It is most often used in rapidly developing areas where the deterrent effect is sometimes considered beneficial. Hardwick does not have any impact fees.
- **Flood hazard regulations:** The Town of Hardwick has adopted flood hazard area regulations in order to participate in the National Flood Insurance Program. Towns do have the right to adopt rules stricter than those by FEMA and Hardwick could explore additional options if the minimum standards are not adequate to protect public health and safety.
- **Highway standards ordinances:** Many towns adopt the standard road standards ordinance provided by the State, but much more can be included in the ordinances. Adoption of clear standards can be helpful in the redevelopment of roads following disasters, in assessing roads for taking over by the town, or for the upgrade of class four roads to year round use.
- **Telecommunication regulations:** Companies investing in infrastructure must be given a roadmap especially when towers are concerned. Are there areas of town where towers are (or should be) prohibited? Are there safety guidelines (e.g. fall zones) that the town wants to enforce? Another aspect to help rollout is telecommunications equipment (e.g. the antennas and dishes). This encourages the use of existing structures instead of the construction of towers by letting cellular service startup without a local permit if they place them on or in existing buildings. Hardwick has revised the telecommunications regulations in the zoning recently to address many of these concerns.
- **Building codes:** Towns may adopt, or enter into agreements to enforce, “fire and building codes” or rental housing health codes. In towns with serious rental housing problems, local officials will sometimes take steps to force owners of blighted properties to make improvements. The State can assist towns interested in investigating this option. Hardwick does not enforce building or rental codes locally.
- **Energy efficiency codes:** The State of Vermont has Residential Building Energy Codes and Commercial Building Energy Codes. In 2013 legislation was passed, which requires local enforcement of these codes, if a municipality requires a Certificate of Occupancy under its zoning bylaw. Hardwick does not require a Certificate of Occupancy.
- **Certified Local Government:** Towns interested in additional grant funds or in adopting regulatory strategies (such as design review districts) can create a Certified Local Government (CLG) commission. Hardwick does not have a CLG commission. This would need to be a town commission so the Hardwick Historical Society cannot be the Town’s CLG commission, although members could certainly overlap. CLG status is a National Park Service program administered through the State Division of Historic Preservation. Once a community receives CLG status they have access to additional grant funding to conduct historic research or complete projects. It does require a commitment from Hardwick to protect the town’s historic resources so this will need to be more fully investigated by the Selectboard and Planning Commission before pursuing.

Other regulatory jurisdictions

- **Fair Housing Laws:** Towns must comply with equal treatment of housing provisions in zoning and subdivision regulations. In Vermont’s enabling legislation for zoning, it establishes six standards where zoning cannot exclude, or have the effect of excluding, certain types of housing. This includes mobile homes, mobile home parks, multifamily housing, accessory apartments, and group homes. Hardwick’s zoning meets all requirements established under law. Any regulations adopted by a community must be carefully developed and fairly administered so as to ensure fair housing standards are met. As discussed earlier, under Federal Law the town must meet certain obligations with respect to housing and discrimination. At this point in time, Hardwick does not appear to have any conflicts with these laws. Hardwick should continue to review current and future bylaws with an eye towards fair housing practices and then continue to enforce the rules equitably.
- **Accepted Agricultural Practices established by the Agency of Agriculture:** Accepted Agricultural Practices (AAPs) are designed to ensure soil conservation and all farms are required to meet these standards. The Planning Commission would recommend that farmers use Best Management Practices (BMPs) where technically and economically feasible. BMP’s are not required but offer better protection of the soil resource and will protect other resources as well including water. Where a farmer would like assistance to achieve some or all of the BMP’s the planning commission will be available to assist them in contacting other regional and state organizations with the resources to assist.
- **Accepted Management Practices established by the Department of Forests, Parks, and Recreation:** Foresters have a similar set of practices to follow in order to conserve soil resources. Accepted Management Practices (AMPs) are the required methods and practices established to protect soil and water. Similarly, forestry has a voluntary set of Best Management Practices for construction on forestry sites. Again, any foresters interested in obtaining more information or assistance in establishing BMPs at their sites should contact the Planning Commission.
- **Act 250 hearings:** The Planning Commission and the Town (represented by the Select Board) are statutory parties to Act 250 applications and should participate in hearings accordingly. Applications are reviewed under the following criteria:
  - (1) Will not result in undue water or air pollution.
  - (2) Has sufficient water available for the needs of the subdivision or development.
  - (3) Will not unreasonably burden any existing water supply.
  - (4) Will not cause unreasonable soil erosion or affect the capacity of the land to hold water.
  - (5) Will not cause unreasonably dangerous or congested conditions with respect to highways or other means of transportation.
  - (6) Will not create an unreasonable burden on the educational facilities of the municipality.
  - (7) Will not create an unreasonable burden on the municipality in providing governmental services.
  - (8) Will not have an undue adverse effect on aesthetics, scenic beauty, historic sites or natural areas, and 8(A) will not imperil necessary wildlife habitat or endangered species in the immediate area.
  - (9) Conforms with the Capability and Development Plan which includes the following considerations:
    - (A) The impact the project will have on the growth of the town or region;
    - (B) Primary agricultural soils;
    - (C) Productive forest soils;
    - (D) Earth resources;
    - (E) Extraction of earth resources;
    - (F) Energy conservation;

- (G) Private utility services;
  - (H) Costs of scattered developments;
  - (J) Public utility services;
  - (K) Development affecting public investments; and
  - (L) Rural growth areas.
- (10) Is in conformance with any local or regional plan or capital facilities program.

The burden of proof is on the applicant for Criteria 1, 2, 3, 4, 9, and 10. The burden of proof is on those opposing the application for Criteria 5, 6, 7, 8, and often 9(A). A permit can be conditioned but not denied under Criteria 5, 6, and 7.

- **Local Act 250 Review:** A town that has zoning bylaws, subdivision regulations, and a Development Review Board and has adopted the Municipal Administrative Procedure Act, may perform “local Act 250 review” to determine the following:
  - The development will not cause an unreasonable burden on the ability of the municipality to provide educational services;
  - The development will not cause an unreasonable burden on the ability of the municipality to provide municipal or governmental services; and
  - The development is in conformance with the town plan.

Although Hardwick does have a development review board and has adopted zoning and subdivision regulations, there is no local Act review. Incorporating local Act 250 review into Hardwick’s zoning and subdivision review processes may help to make the town eligible for downtown designation.

- **“10-acre towns” under Act 250 jurisdiction:** Towns that have both zoning and subdivision regulations are defined as “10-acre towns” for Act 250 (unless they otherwise choose not to). Towns without both zoning and subdivision regulations are called “one-acre towns”. One acre and ten-acres are the threshold parcel sizes for industrial or commercial development that will trigger Act 250 review. For example, a property owner on two acres of land who wishes to develop a commercial or industrial use will need an Act 250 permit if that project is in a one-acre town. It would not need a permit in a ten-acre town. As Act 250 is a very expensive and time consuming process, ten acre towns have a distinct advantage over one acre towns in attracting business. Hardwick is a ten-acre town.
- **Section 248 hearings:** Section 248 reviews are very similar in scope to Act 250 hearings except that they are used for projects that require a Certificate of Public Good from the Public Service Board (PSB) such as power plants and transmission lines. The policies contained in this plan are considered by the PSB in making their decisions. The Select Board should participate in the “section 248” hearing to ensure local concerns are met.

## GOALS

Topic Area	Goals	Implementation Options
Community	<ul style="list-style-type: none"> <li>• For Hardwick’s population to have a slow to moderate growth rate without placing a burden on the existing facilities and services. Growth should not exceed the Town’s ability to provide services to support the population.</li> <li>• For Hardwick to be a diverse community, welcoming to various ages, ethnic groups, races, religions, family types, and social and economic classes.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Monitor growth and change</li> <li>✓ Encourage diversity</li> <li>✓ Act 250</li> </ul>
Historic, Scenic, and Archeological Resources	<ul style="list-style-type: none"> <li>• To preserve Hardwick’s heritage and character for current and future generations. To record and preserve the history of Hardwick.</li> <li>• To preserve individual buildings, structures, and districts of historical value.</li> <li>• To protect the scenic resources in Hardwick for the enjoyment of the residents and the attraction of tourist businesses.</li> <li>• To preserve Hardwick’s fragile archeological record.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Provisions of zoning bylaw and subdivision regulations</li> <li>✓ Assistance to property owners</li> <li>✓ Historical association</li> <li>✓ Downtown and village center designation</li> <li>✓ Historic districts</li> <li>✓ Identification of sites and structures for historic register</li> <li>✓ Tax stabilization</li> <li>✓ Low interest loan programs</li> <li>✓ Certified Local Government</li> <li>✓ Act 250</li> </ul>
Land Resources	<ul style="list-style-type: none"> <li>• To protect and enhance Hardwick’s land resources, including productive farm and forestland and available earth resources, in order to maintain an adequate land base to sustain farming and forestry operations and to secure needed supplies of sand and gravel for the benefit of existing and future generations.</li> <li>• To use Hardwick’s earth resources conservatively for the benefit of existing and future generations.</li> <li>• To conserve and enhance the soils in Hardwick, especially primary soils, for present and future use.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Provisions of zoning bylaw and subdivision regulations</li> <li>✓ Identification and mapping of land-based assets</li> <li>✓ Earth extraction regulations</li> <li>✓ Accepted Agricultural Practices</li> <li>✓ Accepted Management Practices</li> <li>✓ Purchase of development rights</li> <li>✓ Use Value Appraisal Program</li> <li>✓ Conservation commission</li> <li>✓ Act 250</li> </ul>
Natural Areas, Wildlife and Water Resources	<ul style="list-style-type: none"> <li>• Maintain the abundance and diversity of game and non-game wildlife in Hardwick.</li> <li>• To ensure fragile and natural areas are protected and preserved.</li> <li>• To maintain the native diversity of wildlife throughout Hardwick through the protection of critical habitats.</li> <li>• For Hardwick’s water resources, including its lakes, ponds,</li> </ul>	<ul style="list-style-type: none"> <li>✓ Provisions of zoning bylaw and subdivision regulations</li> <li>✓ Wellhead protection areas</li> <li>✓ Flood hazard regulations</li> <li>✓ Flood resilience plan</li> <li>✓ Purchase of lands</li> <li>✓ Work with solid waste district</li> </ul>

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	<p>streams, rivers, wetlands, groundwater, and associated habitats, to be preserved and, where degraded, improved in order to ensure water quality for drinking, recreation, and the environment.</p> <ul style="list-style-type: none"> <li>• For Hardwick’s water resources, including its lakes, ponds, streams, rivers, wetlands, groundwater, and associated habitats, to be preserved and, where degraded, improved in order to ensure water quality for drinking, recreation, and the environment.</li> <li>• To ensure Hardwick’s rivers and streams contain clean water, a healthy riparian habitat and stable stream banks.</li> <li>• To maintain the overall health of our lakes and ponds for recreation and environmental purposes.</li> <li>• To preserve and protect wetlands from pollution, filling, and any other uses or activities that will result in their degradation or a reduction in its capacity to provide wildlife habitat, flood control and water storage.</li> <li>• To protect the health, safety and welfare of the residents of Hardwick by limiting development in flood hazard areas to agriculture, recreation, and open space.</li> <li>• To maintain the quality and quantity of local groundwater supplies.</li> <li>• To maintain and, where degraded, improve the water quality across the town.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Conservation commission</li> <li>✓ Landowner education</li> <li>✓ Act 250</li> </ul>
Housing	<ul style="list-style-type: none"> <li>• For Hardwick to have safe and affordable housing available in a variety of types for all incomes, ages, and for those with special needs.</li> <li>• All housing should be safe for the occupants and should not present a hazard for the public at large.</li> <li>• Hardwick should have a variety of housing to meet the various needs of the residents of town including vacation homes, multifamily housing, single family, two family, mobile homes, and accessory apartments.</li> <li>• For residents of Hardwick to have the opportunity to find housing, for purchase or rent, which is affordable.</li> <li>• To ensure that households and individuals with special housing</li> </ul>	<ul style="list-style-type: none"> <li>✓ Housing commission</li> <li>✓ Housing authority</li> <li>✓ Partnership with housing providers</li> <li>✓ Special needs housing</li> <li>✓ Zoning provisions</li> <li>✓ Flood hazard regulations</li> <li>✓ Building codes</li> <li>✓ Fair housing laws</li> </ul>

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	<p>needs, including the elderly, handicapped, low-income households are able to attain suitable and affordable housing.</p> <ul style="list-style-type: none"> <li>• That housing in Hardwick is available to all individuals and families regardless of race, gender, sexual orientation, age, marital status, religion, color, national origin, disability, having children, or receiving public assistance.</li> </ul>	
Economic Development	<ul style="list-style-type: none"> <li>• For Hardwick to have a diverse and resilient economy based on agriculture, small business, and light industry that is compatible with Hardwick’s scenic landscape and will raise income levels and provide employment for Hardwick residents.</li> <li>• For Hardwick to be a regional center for commercial activity and employment.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Economic development coordinator</li> <li>✓ Designated downtown and/or growth center</li> <li>✓ Economic assessment and strategic plan</li> <li>✓ Revolving loan fund</li> <li>✓ Tax stabilization</li> <li>✓ Industrial and business parks</li> <li>✓ Industrial districts and multi-use districts (zoning)</li> <li>✓ Fair, efficient permitting process</li> <li>✓ Work with regional and state partners</li> <li>✓ Chamber of Commerce</li> <li>✓ Act 250 &amp; “10 acre” jurisdiction</li> </ul>
Public and Private Facilities and Services	<ul style="list-style-type: none"> <li>• To ensure adequate facilities and services are available to protect and enhance the lives of the residents, visitors, and businesses of Hardwick.</li> <li>• All wastewater in Hardwick is appropriately treated so as to protect public health.</li> <li>• All household water supplies should be clean and be of an adequate supply.</li> <li>• To provide a safe environment in which to work, live, and play.</li> <li>• For Hardwick to continue to have a variety of quality local health care options.</li> <li>• To have quality affordable local child care opportunities in Hardwick.</li> <li>• To have adequate services available to protect and enhance the lives of residents and visitors.</li> <li>• To maintain and enhance library facilities and opportunities.</li> <li>• For Hardwick’s cemeteries to be maintained with respect and</li> </ul>	<ul style="list-style-type: none"> <li>✓ Public improvements</li> <li>✓ Impact fees</li> <li>✓ Support for nonprofits and volunteer organizations</li> <li>✓ Capital budgets</li> <li>✓ Act 250</li> </ul>

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	<p>dignity and have sufficient capacity</p> <ul style="list-style-type: none"> <li>• To maintain and enhance recreational facilities and opportunities.</li> <li>• to support future need.</li> <li>• For Hardwick’s residents and businesses to responsibly dispose of solid waste including efforts to reduce the amount of waste generated and increase recycling.</li> <li>• To provide storm drainage facilities as needed for the proper treatment of storm runoff.</li> <li>• For suitable amounts and types of land to be set aside in Hardwick for public use and enjoyment.</li> </ul>	
Information Technology & Telecommunications	<ul style="list-style-type: none"> <li>• For residents and visitors of Hardwick to have access to a range of broadband opportunities.</li> <li>• For mobile telecommunication services to be available at a variety of frequencies, including cellular, PCS, and “WiFi”, to meet a variety of information and communication needs.</li> <li>• For Hardwick to have 100% coverage for DSL, cable, and cellular phones in town by 2018.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Telecommunications committee</li> <li>✓ Telecom regulations</li> <li>✓ Franchise agreement with cable companies</li> <li>✓ Work with emergency providers</li> <li>✓ Act 250 and Section 248</li> </ul>
Energy	<ul style="list-style-type: none"> <li>• For citizens to generate energy locally from renewable sources, whether for heating, electricity, or transportation.</li> <li>• Energy should be provided in a safe, reliable, and efficient manner.</li> <li>• To promote energy efficiency and conservation in the design construction and use of municipal, commercial, industrial, and residential structures.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Energy committee</li> <li>✓ Efficiency Vermont</li> <li>✓ Zoning exemptions for renewable energy structures</li> <li>✓ Public survey regarding wind farms</li> <li>✓ Infrastructure to promote alternative transportation and carpooling</li> <li>✓ Energy efficiency codes</li> <li>✓ Section 248</li> </ul>
Education	<ul style="list-style-type: none"> <li>• To plan for growth and development in a way that allows Hardwick to provide quality education services and adequate facilities for all residents without placing an undue burden on tax payers.</li> <li>• Provide educational services and facilities to meet the needs of Hardwick’s children.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Monitoring growth and changes</li> <li>✓ School boards</li> <li>✓ Act 250</li> </ul>
Transportation	<ul style="list-style-type: none"> <li>• The town highway system should be safe and efficient for vehicular and non-vehicular use, as appropriate, and be maintained in a cost-effective manner.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Representation on the TAC</li> <li>✓ Capital plans</li> <li>✓ Road, bridge, and culvert assessments</li> </ul>



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	<ul style="list-style-type: none"> <li>• Pedestrian and non-vehicular transportation networks should be safe and conveniently located to encourage their use.</li> <li>• To support efforts to provide regional public transportation services for the general public and special transportation services for those who require assistance.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Highway standards ordinances</li> <li>✓ Support to other organizations</li> <li>✓ Act 250</li> </ul>
Land Use & Development	<ul style="list-style-type: none"> <li>• Maintain Hardwick's present patterns of land use: dense residential and commercial uses concentrated in Hardwick village and East Hardwick and sparsely developed agricultural and forest land outside these village centers, with a rural and natural skyline.</li> </ul>	<ul style="list-style-type: none"> <li>✓ All of the above, and</li> <li>✓ Act 250</li> </ul>

## Appendix B: Flood Resilience Recommendations from Geomorphic Assessment and Corridor Plan

### Upper Lamoille River Stream Geomorphic Assessment, Phase 2 Report Greensboro and Hardwick, Vermont, February 2009

This study covered the Lamoille River from the Jackson Dam upstream to its headwaters in Greensboro. The report gives a detailed analysis of each of the stream reaches and concerns found therein. Overall, the report had the following conclusions and recommendations.

#### Next steps:

- Due to the number of structures impacting channel geometry noted in this report, it is recommended that a full Bridge and Culvert Assessment be conducted for the Upper Lamoille River main stem and its major tributaries to help prioritize future modifications.
- Continue to work with the Trees For Streams program to install buffers at noted locations.
- It is recommended that water quality sampling be conducted in Hardwick village to assess the impact of stormwater inputs.
- Consider future assessments for Upper Lamoille tributaries to better identify management and restoration opportunities.
- Develop landowner and municipal outreach program to discuss project opportunities; such as zoning, easements, buffers and other noted management strategies.
- Continue to update this report to a corridor plan that will include additional maps and tables tracking management strategies and potential projects as they are implemented.

#### Conclusion

The primary impacts on the Upper Lamoille River are undersized structures, agriculture, and village encroachments (roads and development). The overall concerns of this section of river are related to sediment inputs into Hardwick village, and flood storage capacities upstream. Many of the reaches have under gone some level of historic degradation and straightening; and are now undergoing planform adjustment and aggradation. These adjustments contribute to the sediment that is being delivered into the system. The Jackson Dam impoundment is a primary source of conflict for these concerns and limiting factor in channel equilibrium upstream. Floodplain access is adequate on some reaches, though there are feasible improvements to enhance flood attenuation and decrease sediment with the cooperation of landowners and the towns of Hardwick and Greensboro. Long term planning of infrastructure with the goal of addressing these overall concerns is highly recommended to achieve a greater level of channel stability and compatibility with corridor land use.

### Lamoille River Corridor Plan Hardwick to Johnson Lamoille County, Vermont December 15, 2010

This report studied the Lamoille River downstream of the Jackson Dam. Thus, only Reach 23 is located within the Town of Hardwick, however the report did recommend two projects for this reach. Project #1 proposes to restore the riparian buffer along the Lamiolle with plantings between the Rt. 15 bridge and Jackson Dam. Project #2 deals with embankment removal at a site along the Lamoile Valley Rail Trail (LVRT). Embankment removal will re-connect this portion of the Lamoille River with its former floodplain, which has been isolated since 1877 when the St. Johnsbury and Lake Champlain Railroad was first constructed. The proposed embankment removal will allow water to once again spread over the Lamoille River floodplain in this location, reducing flood and erosion hazards in the river corridor and improving water quality.

**Table 8. Lamoille River Site Level Opportunities for Restoration and Protection  
Wolcott and Hardwick, Vermont (see Map #1)**

Project # Segment	Type of Project	Site Description Including Stressors and Constraints	Project or Strategy Description	Technical Feasibility and Priority	Other Social Benefits	Costs	Land Use Conversion	Potential Partners
#1 From upstream of Route 15 Bridge in Wolcott to Route 15 Bridge just downstream of Hardwick Lake Dam (Wolcott and Hardwick) R23-A	Passive Restoration	Fair geomorphic rating due to historic degradation, which may be due to sediment retention in upstream dam. Many depositional features and major planform adjustment. Lack of buffer from hay fields is prevalent.	Improve riparian buffer through streamside plantings.	Moderate priority due to moderate incision ratio	Prevent erosion, improve habitat and reduce water temperature	Low cost of plantings	Hay fields to forested buffer	VANR, LCPC, landowner, CREP, US Fish and Wildlife Service
#2 LVVRT just east of Johnson/ Hyde Park town line "Hardwick_1" (Hardwick) R23-A	Active Restoration	Location of potential floodplain mitigation site on the Lamoille Valley Rail Trail (Hardwick_1) identified by Milone and MacBroom (see map on page 7 of Appendix 3)	Floodplain mitigation	High priority	Improve flood and sediment attenuation	Unknown	Unknown	VANR, VTrans, VAST, LVRTC, LCPC, LNRCD

Proposed restoration and protection project for the Lamoille River reaches R23

