

TOWN OF CHITTENDEN

MUNICIPAL PLAN



**PREPARED BY THE
CHITTENDEN TOWN PLANNING COMMISSION**

**ADOPTED BY THE
TOWN OF CHITTENDEN SELECT BOARD**

ADOPTED OCTOBER 19TH 2015

Town of Chittenden Select Board – 2015

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The Chittenden Town Planning Commission holds its regularly scheduled meetings on the first Monday of the month at 5:30 p.m. at the Chittenden Town Clerk's Office, unless otherwise noted. Special meetings are warned to the public at the Town Clerk's Office, the Post Office, and the Wooden Barrel Store.

Technical Assistance by the Rutland Regional Planning Commission



The Chittenden Town Plan is funded in part by a Municipal Planning Grant administered by the Vermont Department of Housing and Community Development, Agency of Commerce and Community Development.

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Introduction

Purpose

The purpose of the Town Plan is to provide information and planning recommendations to residents, town officials and surrounding communities. Planning is important so that development can be more effectively coordinated and in keeping with the needs and desires of residents as well as in compliance with state law. Additionally, having a planning commission and an adopted Town Plan allows the town to implement, amend and enforce land use regulatory documents, such as Flood Hazard Zone bylaws which are necessary in order for the town to remain eligible for the National Flood Insurance Program. A Town Plan is also relied on during the Act 250 (Land Use and Development Act) permitting process, as Act 250 law requires that development be in conformance with adopted local and regional plans.

Chittenden residents generally regard their community as a unique and special place. This attitude gives rise to a sense of civic responsibility, loyalty, and shared commitment to the town's welfare. The unique and special character of Chittenden is principally derived from the rural character of the community and the natural beauty of its mountain setting. The goals and recommendations found in this plan are meant to preserve and protect the town's assets while providing for improvements and growth that support the community.

The Chittenden Town Plan seeks to reflect the collective values and goals of the town's residents and to guide future development in harmony with these objectives. The official adoption of the Town Plan represents a conscious community decision about the town's future character, its priorities for land use and its conservation of physical resources. This decision is based in large part on Chittenden's sense of identity as a town and its residents' desire to preserve those qualities that distinguish it.

Implementation of the Town Plan

The Town Plan is intended to be a guide for community programs and decision-making. Its findings and recommendations should influence the town's budget and capital expenditures, community development efforts and natural resource protection initiatives. It is important to remember that the Town Plan is not a zoning ordinance. It is a tool designed to outline areas of community concern and priorities requiring attention. The Plan can help the town or other organizations in the town attain funding and support for activities that the Plan has listed. The Plan also allows the town to express its voice in state land use permitting proceedings such as Act 250 cases.

As in any community, a wide range of interests and issues exists in Chittenden. Unanimous agreement on any topic or detail is difficult to achieve in a diverse group of people. The Plan attempts to balance those interests and thereby best represent the variety of opinions in the community.

Chittenden Planning Commission

The Vermont Municipal and Regional Planning and Development Act (*Vermont Statutes Annotated, Title 24, Chapter 117*) enables the legislative body of all municipalities to create a Town Planning Commission which may consist of not less than three nor more than nine members. Members of the Chittenden Town Planning Commission (CTPC) are appointed by the Chittenden Select Board. At least a majority of the commission must be permanent residents of the community. In accordance with the Vermont Municipal and Regional Planning and Development Act, the planning commission is given the authority to prepare a Municipal Development Plan. Currently, the CPC is a seven-member commission with each member serving a three-year term.

Local, Regional and Statewide Planning in Vermont

The Chittenden Municipal Development Plan (Town Plan) is an integral part of the regional and statewide planning process. In adopting the

Town Plan, citizens of Chittenden may anticipate the future with the knowledge that a significant step has been taken in the development and preservation of their community. The plan was prepared in conformance with the requirements of the Vermont Municipal and Regional Planning and Development Act (*Vermont Statutes Annotated Title 24, Chapter 117, Section 4382. The plan for a municipality.*) The Chittenden Town Plan is consistent with the Rutland Regional Plan, as readopted in 2015, and is also compatible with the approved plans of surrounding communities. Under the authority of the Selectboard, the Chittenden Planning Commission prepared this Town Plan.

In terms of its significance in relation to state land use controls and growth policy, the Town Plan plays a key role. Vermont's Act 250 includes a provision for a review procedure through which all applications for a subdivision and development must pass. During the review process, the feasibility of each project is weighed against ten criteria, guidelines set forth in Act 250 Section 6086, as environmental and economic safeguards. The ninth criterion requires that any subdivision or development must be "in conformance with a duly adopted capability and development plan, and land use plan." These plans are developed by the State of Vermont. The tenth criterion insures that the proposed development is "in conformance with any duly adopted local or regional plan or capital program under Chapter 117 of Title 24." These plans are developed by the towns and regional planning commissions. In this way, planning and development at the three levels of government (state, local and regional) are integrated to form a consistent approach to growth.

Preparation of the Plan

This plan has been drafted by members of the Chittenden Planning Commission with input from the public, the Chittenden Selectboard, and the Rutland Regional Planning Commission

staff. Technical assistance, made possible by a Municipal Planning Grant, has been provided by town staff and a contract with the Rutland Regional Planning Commission and funding from the Town. The Chittenden Town Plan is funded in part by a Municipal Planning Grant administered by the Vermont Department of Housing and Community Affairs, Agency of Commerce and Community Development.



Public involvement was encouraged in all stages of the preparation of the plan. A community survey, conducted in 2015, was used to gauge public opinion on key issues. The survey was mailed to each household in town, and approximately 100 responses were received. Survey results are included throughout this plan and informed the writing of the plan. An appendix also summarizes the full survey results. The Chittenden Planning Commission also sponsored a community forum on April 16, 2015 which included presentations on flood resilience, recreation, and land use bylaws. Residents at the forum spent time discussing desired types of development, recreational opportunities, and how to increase citizen participation in local government. The public was invited to Planning Commission meetings held throughout the plan update process. The public was also involved during the adoption process, for the Planning Commission Public Hearing on September 16, 2015 and the Select Board Public Hearing on October 19, 2015.



Continued Maintenance of the Plan

The long-range goals and vision the Plan contains are designed to address the town's needs during the next 20 years or more. Because planning is a flexible, continuing and long-range process, the Chittenden Town Plan should be periodically reviewed and amended in light of changes affecting the municipality. In accordance with Section 4387 of the Vermont Municipal and Regional Planning and Development Act, the Plan shall expire and have no further force and effect five years from the date of its adoption, unless it is readopted by the Selectboard. The Plan may be readopted in the form as expired or about to expire, and shall remain in effect for the next ensuing five years or until amended. The Chittenden Planning Commission should review the Plan on a regular basis to ensure it is a current and vital document.

Relationship between this Plan and the Plans for Surrounding Areas

This plan recognizes that Chittenden does not exist in isolation from the region and will be affected by what happens in the surrounding municipalities. However, the Plan does not recommend that Chittenden should reflect the type and intensity of development occurring elsewhere, as rapid growth could destroy the qualities that make Chittenden unique.

This plan promotes residential, agricultural, conservation, and small-scale commercial activities at levels consistent with the community's endowment of natural resources at the rural edge of the Rutland Region. However, the Plan recognizes the need to accommodate population, housing and business growth within the town. The relationship between this plan and

the development trends and plans for the surrounding area has been considered. For purposes of this plan, the surrounding area includes the Towns of Mendon, Pittsford, Killington, Rutland Town, Brandon, Goshen, Rochester and Pittsfield as well as the Rutland Region as a whole.

Review of the land use plans of surrounding communities suggests that the future land use pattern promoted by this plan is generally compatible with our neighbors. Surrounding communities promote low-density land development and continuation of resource-based uses, such as agriculture and forestry in outlying areas and higher density and commercial uses in existing built-up areas. Sensitive areas, such as flood plains, are also identified and targeted for conservation, as they are in Chittenden.

Overall Statement of Future Goals

This document represents the culmination of the Chittenden Planning Commission's efforts to create a town plan. The Chittenden Planning Commission has attempted to develop a town plan that is sufficient and in the best interest of the Town of Chittenden. The Selectboard and the Planning Commission should follow the recommendations suggested in this plan.

This document is a history of the town, a general inventory of existing conditions, and a general proposal to review future development in light of a desire to preserve the rural quality of the town while protecting its natural resources and cultural and historic sites.

The Chittenden Planning Commission has agreed on the following goals:

- Preserve the rural quality of the town.
- Conserve natural resources.
- Encourage the protection of cultural and historic sites.
- Protect water, soils, forests, wildlife and natural areas.
- Establish a coordinated, comprehensive planning process and policy framework to help guide decisions.
- Encourage citizen participation at all levels of the planning process, and work to assure that decisions shall be made at the most local level possible commensurate with their impact.
- Consider the use of resources and the consequences of growth and development for the region and the state as well as the community in which it takes place.
- Affordable housing for Chittenden's senior citizens.

Physical Characteristics of Chittenden

Chittenden is located in the northeastern part of Rutland County. It is the largest town in land area in Vermont, covering approximately 73 square miles. Despite the large land area, the population density is very low at 17 people per square mile. (Source: US Census 2010) A large majority of the land remains in a wilderness state. The entire region is mountainous, with the Green Mountain Range dividing the town into two parts. The eastern slopes of the town are mostly uninhabited and not easily accessible from the west.

The significant irregularities in slope and elevation range from the 3,485-foot Bloodroot Mountain in the central-northeast sector of the town to the 900-foot elevations shared by the East Creek and Furnace Brook stream valleys, both in the southwest corner of the town. See Land Cover Map. These two lower elevation areas support the population concentrations and the only maintained roads to and from Chittenden.

The East Creek and Furnace Brook valleys are each approximately one-quarter mile wide. From the valley floors, the wild and mountainous lands climb steadily and steeply into the higher elevations, with one exception: the Chittenden Reservoir plateaus at 1,500 feet. From here, the forested and uninhabited hills and mountains tower to their summits where the Long Trail traverses the town's entire north-south skyline.

For more information, see the Natural Resources/Physiography Section of this plan.

History

Note: Most of the material in this section is from Chittenden, Vermont (in Rutland County): A Town History published by the Chittenden Historical Society, Inc., copyright 2008, written, edited and compiled by Fran Wheeler and Karen Webster.

The charter for Chittenden was granted to Gershom Beach and 65 associates by the Legislature of the Independent State of Vermont on March 16, 1780. The town was named for Vermont's first governor, Thomas Chittenden. The earliest residents settled along the border with Pittsford. Because the terrain is very mountainous, three hamlets developed as more settlers arrived in the town. The first settlement to flourish was that of New Boston, on the high plain. However, a decline in the state's economy led to the abandonment of New Boston in the years surrounding 1810. Some of the residents moved to the lower elevation hamlets located in South and North Chittenden. In 1816, the southern half of the Town of Philadelphia, located north of Chittenden, was annexed to Chittenden, thereby increasing the size of the town from 36 to 54 square miles, which made it the largest township in the state.

The hamlet in North Chittenden (later known as Holden) was the next to flourish. Agriculture and mining were the impetus for this growth. A rich vein of iron ore, very pure and the largest known yet in the state, was found along West Road in North Chittenden. Ore from that mine fed the furnace

built in neighboring Pittsford in 1792, as well as a small bloomery forge in Chittenden along Furnace Brook, leading that area to become known as Forge Flats. Companion industries of lumbering, charcoal burning and lime kilns sprang up to feed the furnace, by then owned by the Granger Iron Co. In 1868, Charles Reed Holden brought the first steam lumber mill to North Chittenden, and a lumber boom commenced. Holden's holdings in lands and mills increased, and the hamlet was named Holden after he also brought a post office to North Chittenden to supplement the one that had been established in South Chittenden in 1841.

The town's mineral wealth was extensive. In the later half of the 1800s, iron ore was mined in the Michigan Basin area on the east side of town by the White River Iron Co. Silver, lead, and manganese were also mined until the advent of the Civil War when the costs of transportation made the operations unprofitable. In the 1860s, a railroad was proposed and surveyed to run between Woodstock and Rutland through Chittenden, but it was never built.

As fields were cleared, potash became the first important manufactured product in Chittenden. At first the demand for potash, used in making naphtha soap, was high. As demand for potash decreased, farming became an important element of growth in Chittenden. Although mountainous, the town supported excellent farms in the fertile Furnace Brook and East Creek valleys, where Indian corn, wheat, barley, rye, potatoes and other vegetables were grown. Sheep, dairy cows and beef cattle were raised. The animal and vegetable products supplied local as well as distant markets.

In the beginning, residents took their grains out of town to be ground, transporting them as far as Bennington where they were traded for other supplies. The first mill of record was a combination lumber and grist mill built by Pickley and Nevins in 1808 in South Chittenden Village along East Creek. In time, another eight lumber mills were built along East Creek and more along the Furnace Brook in North Chittenden. The slabs of wood left stacked beside the road in South Chittenden led to the nickname "Slab City." A lumber boom led to development in South Chittenden, as well. Other

commercial and industrial enterprises in Chittenden in the middle to late 1800s were blacksmithing, gun-making and production of patent medicine.

Zephaniah Eddy moved to Chittenden with his young family in 1841. The children, who were said to have inherited the supernatural powers of their mother Julia Macomb Eddy, became world famous for their psychic abilities. During the 1870s Chittenden was known as "Spirit Capital of the Universe" mostly from the séances they held for audiences from around the world gathered at their farm house and nearby property. Legend has it that spirit figures were conjured up in the woods at Honto's Cave, a formation made by several huge rocks leaning against one another.

By 1880, the town's population reached a peak of 1,092. Residents included farmers, dairymen, loggers, miners, sawyers, teamsters, blacksmiths, carpenters, gunsmiths, masons as well as representatives of the professions that included doctors, ministers, schoolteachers, bookkeepers and manufacturers. The town supported three churches, a hotel, and several general merchandise stores. Twelve mills supplied lumber products. The school system had 11 school districts by 1869, supporting 10 school houses. The two hamlets were becoming more densely settled.

Between 1880 and 1900, decline in the demand for lumber, as well as exhaustion of supply, plus the added costs of transportation from Chittenden to markets, led to the corresponding decline in population. Competition with the larger farms being settled on the Western frontier made farmers lose market share. This followed statewide and national trends in rural mountain towns. By 1890, 50 percent of the rural farm and non-farm people in the state migrated to the cities in pursuit of new jobs. Chittenden followed this trend, losing about half of its population to urban relocation by 1900. The Depression, sandwiched by the Great War and World War II, did little to improve Chittenden's situation.

During this period of decline, however, other changes were taking place. The Pittsford National Fish Hatchery, named for its postal address but located entirely within the Town of Chittenden, was

established in 1906 and began production in 1909. The cool, clean mountain waters of Furnace Brook were found to be ideal for raising brook, brown and rainbow trout and later other species of fish. Today Atlantic salmon for stocking the Connecticut River and landlocked salmon to supply Lake Champlain are raised at the Hatchery. In 2009, the fish hatchery was officially renamed the Dwight D. Eisenhower National Fish Hatchery in honor of President Eisenhower's 1955 visit to the area and the time he spent fishing in Furnace Brook while here.

The early 20th century also led to considerable interest in a new form of venture: electric power generation. Capitalists realized the extensive 17 square-mile drainage area supplied by four streams in the center of Chittenden was an ideal spot for a large new dam to generate electricity. In 1901, Vermont Marble Company, which financed the first construction at the dam, used the opportunity to supply auxiliary power for operation of its marble products manufacturing in Proctor. When the dam was completed in 1909, Rutland Railway Power and Light used the water's energy to supply the trolley systems that traveled between Rutland and Bomoseen and Fair Haven. Several power companies were spawned to supply the emerging market for electricity. In 1929 they were consolidated into the Central Vermont Public Service Corporation (CVPS). In 2012 CVPS merged with Green Mountain Power (GMP), and now GMP provides electricity in the area.

With the development of electric power from the new reservoir came new people, most notably the William S. Barstow family. After the untimely death of their son Frederic, Mr. and Mrs. Barstow built and donated a state-of-the-art school to the community in his memory. The Frederic Duclos Barstow Memorial School, dedicated on July 1, 1933, and generously equipped for the education of children, remains an exemplary Kindergarten-8th grade school today.

The Barstows left many contributions to Chittenden beyond the school. Their properties now house the town's largest commercial concerns, Mountain Top Inn and the Fox Creek Inn.

The Mountain Top Inn has played a prominent role in the economic growth of Chittenden for over half a century. Perched on a hill overlooking the Reservoir, its sloping meadows afford a spectacular view of the 721 acre body of water and the mountains beyond. The economic impact Mountain Top has on the community is substantial in that it is the second largest employer, after Barstow School, in the town. The Mountain Top Inn had its beginnings as a farm barn that was acquired by Mrs. Barstow in 1939 and converted to a lodge capable of accommodating the overflow of guests in her home. Called at that time the Mountain Top Tavern, the amenities, ambiance and service were such that the inn gained a formidable reputation. Opened to the general public it enjoyed considerable success as a summer retreat. Despite a fire and several changes of ownership, Mountain Top Inn has remained a preeminent resort.

While the Chittenden Reservoir with its scenic recreational opportunities has added much to the quality of life in Chittenden, in the spring of 1947 the town saw a horrendous downside. A record-breaking rainfall caused the flashboards on top of the dam to give way, sending a mountain of water cascading into Chittenden Village. In addition to the eight homes and two stores lost along East Creek, there was extensive damage to roads and many other buildings. The water rushed farther into Pittsford Pond. That dam broke, sending floodwaters into Rutland City. Miraculously, not one life was lost. The devastation of the flood, coupled with the population decline, brought the town to one of its lowest points. Chittenden was faced with education costs it could not afford and feared losing its school. Neighboring towns were in need of a new school, and a solution was found by combining Chittenden, Mendon and Pittsford with an agreement to jointly operate the Barstow School in 1949. Students from North Chittenden did not generally attend Barstow School until the early 1950s when the portion of Holden Road over German Hill was greatly improved.

A number of community organizations -- including the Chittenden Volunteer Fire Department, the Chittenden Library, the Chittenden Dammers (snowmobilers club), the Chittenden Community Association, Chittenden Historical Society and the

Chittenden Recreation Committee – have been created over time to serve a variety of purposes that preserve, protect and promote our particular way of life.

One of the oldest buildings in Town, the Grange Hall, was constructed in 1833 and used by the Congregational Society in Chittenden as their church. The Chittenden Congregational Society ceased to exist by 1873 and the building was then used by the National Grange of the Patrons of Husbandry (the Grange). Originally an educational and social organization, the Grange soon became the leading mechanism of support for farmer's rights and correction of political/economic abuses to which farmers were subjected. The Grange Movement waned and lost most of its political and social prominence in the early 1900s. The building was deeded to the Town in 1906 and served as town hall for North Chittenden, and was the site for Town Meeting. Used also for dances, social events, birthday parties and wedding receptions it was the center of social life in the northern part of town. Age and vandalism forced the Town to close the facility in the early 1960s. The town restored the facility and reopened it in 2009.

Over time, Chittenden has changed considerably as industry and farming declined and land use and ownership changed. In 1936, the National Forest Service acquired the first land in Chittenden to become part of the Green Mountain National Forest, which was established primarily to protect the watershed areas of the State and to prevent the flooding and erosion that followed the extensive logging of early years. Currently, approximately 68% of the land in Chittenden is either in state, town or national forestland.

After World War II, the relatively inexpensive cost of land coupled with the development of the ski industry, summer recreational pursuits, the growing reputation of Barstow School and the public's love affair with personal transportation produced a revived interest in the Town.

Since the 1960s and the 1970s the population of Chittenden has increased dramatically. This increase in population set a new record and has been

attributed to economic expansion of the regional business center (Rutland City) and associated residential development. Also playing a part in this growth is the maturation of recreation industries, improved regional transportation, more leisure time and the popular back-to-nature movement.

Farming activity declined drastically over the years. By 1974 only four farms were operating from a high of 150 farms in 1880. Today, one operating dairy farm remains along with several smaller 'hobby' farms. In stark contrast to the diversity of enterprise that existed in the town until the early 1880s, the town today contains no manufacturing facilities and limited commercial activity. Present-day Chittenden is best described as an appealing and desirable bedroom community and year-round destination for outdoor enthusiasts. Approximately 17% of the residences in town are vacation or second homes (Source: US Census 2010). Additionally, Barstow School is a major asset to the community and serves as a magnet for those seeking a quality public education for their children.

Socioeconomic Information

An analysis of a community’s population, housing and economic activity is an important feature of a municipal plan. This socioeconomic information allows the town to estimate future population growth or decline, anticipate impacts on community services and land use, and respond to the changing needs and demands of its citizens.

The following information is a highlight of recent trends in the Town of Chittenden. Much of the data in this plan is from the 2010 US Census and should be updated when new data becomes available.

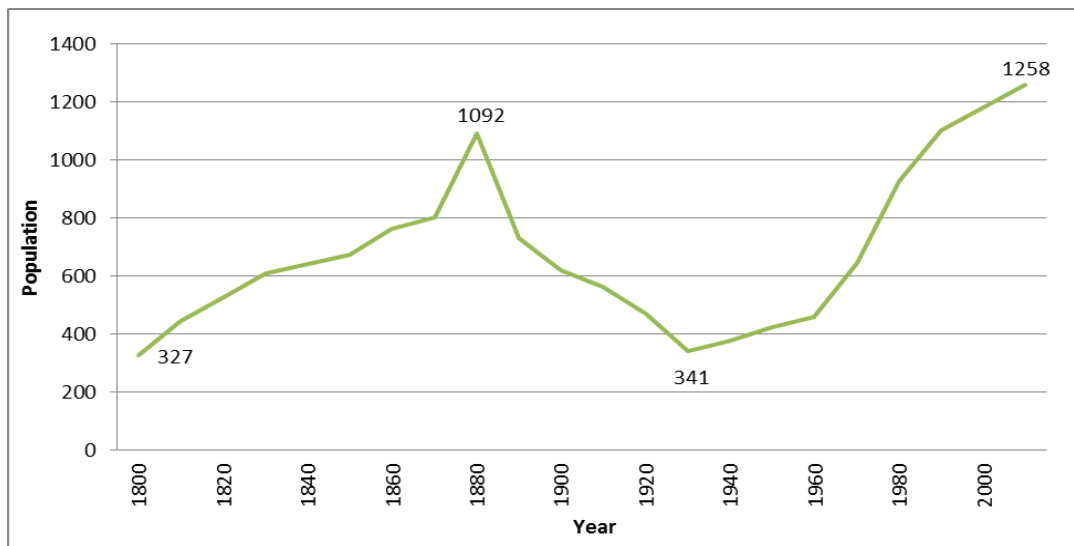
Population

The population of Chittenden has fluctuated significantly over the past 200 years, but has grown overall. Chittenden saw a precipitous drop in population between 1880 and 1930 when the population decreased from 1,092 to 341 people. The population in 2010 was 1,258, continuing a trend of population increase that began in the 1940’s. The chart below illustrates the population history of Chittenden. According to the Vermont Housing Needs Assessment (Bowen National Research, 2015), the population of the County is expected to decrease by 0.9% from 2015 to 2020.

Vermont’s aged population is the second oldest of the 50 states (after Maine), with a median age of 41.5 years (Source: US Census 2010). This fact has significant planning implications. For example, it suggests that the state and town should anticipate increased and changing demands for community and health-oriented services. It also suggests the need to attract workers to replace people who retire from the workforce.

Chittenden’s population, as a whole, is aging. Between 2000 and 2010, the average age of the town’s residents rose from 39.6 years in 2000, to 45.4 years in 2010 (Source: US Census). The 2010 figure is close to that of Rutland County (44.3 years) and slightly higher than that of the State of Vermont (41.5 years). As can be seen by the below chart, the population of individuals between the ages of 0-44 decreased while those age 45-75+ increased. These figures reflect the aging of the baby boom generation and the lack of employment opportunities to retain young adults in the region. The aging of the population is a statewide and national trend.

Figure 1. Population History of Chittenden, VT

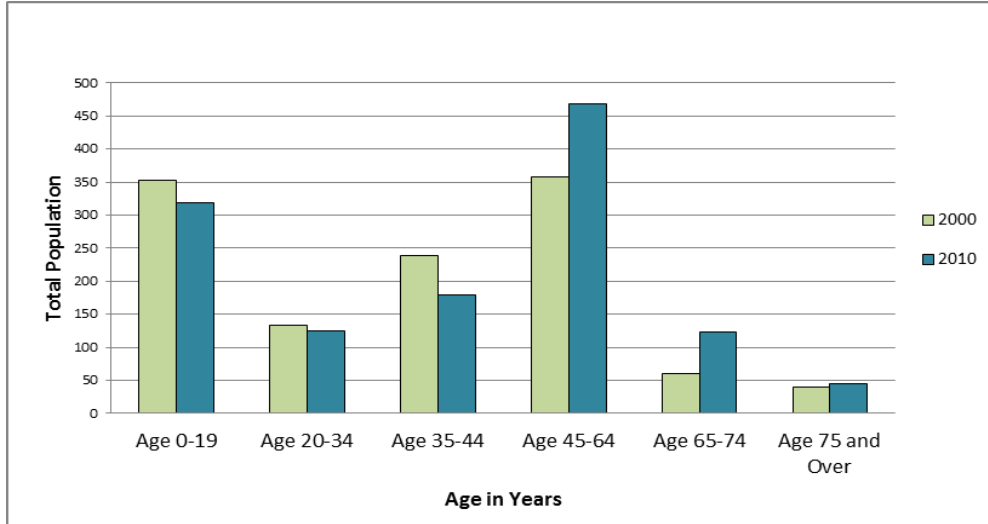


Source: US Census & Vermont Indicators Online

Figure 2. Timeline of Notable Chittenden Events

<p>1780 Town of Chittenden granted to Gershom Beach and others</p> <p>1780 Town of Philadelphia granted to Samuel Beach and others</p> <p>1789 Town of Chittenden is organized</p> <p>1802 Andrew Barnard operating blacksmith shop</p> <p>1804 Town of Philadelphia organized</p> <p>1813 Most residents have left New Boston</p> <p>1814 Northern half of Philadelphia is annexed to Goshen</p> <p>1816 “The year without a summer”</p> <p>1816 Southern half of Philadelphia is annexed to Chittenden</p> <p>1832 Methodist Church built in No. Chittenden</p> <p>1833 Congregational Church is built</p> <p>1834 Organization of Congregational Society</p> <p>1840s Iron forge gives name to Forge Flats in Holden</p> <p>1841 Zephaniah Eddy comes to Chittenden</p> <p>1841 Chittenden Post Office opens</p> <p>1850 East Pittsford Methodist Church built</p> <p>1851 Organization of Wesleyan Methodists in No. Chittenden</p> <p>1854 Last full-time minister at Congregational Church</p> <p>1861 Civil War begins (ends 1865)</p> <p>1868 Charles Reed Holden brings first steam mill to No. Chittenden</p> <p>1873 Congregational Church falls from state minutes</p> <p>1875 Methodist Church built in South Village</p> <p>1879 Patrons of Husbandry (the Grange) is organized in Vermont</p> <p>1880 Census records town population of 1,092</p> <p>1885 Chittenden Public Library is organized</p> <p>1890 All mining ends in Chittenden</p> <p>1892 Post Office comes to Holden</p> <p>1900 City Bridge reconstructed</p> <p>1900 First telephone in Chittenden</p> <p>1901 East Pittsford Pond Dam completed</p> <p>1905 First electricity in town at Roger’s place</p> <p>1906 Town purchases the Grange Hall</p> <p>1906 U.S. Fish Hatchery established</p> <p>1909 Chittenden Reservoir Dam completed</p> <p>1912 Civil War monument dedicated</p>	<p>1914 World War I begins (ends 1919)</p> <p>1914 Powerhouse completed</p> <p>1916 New iron City Bridge constructed</p> <p>1927 Flooding causes much damage</p> <p>1928 Chittenden Dam drained for repairs</p> <p>1930 The Census records a population of 341</p> <p>1933 National Prohibition ends</p> <p>1933 Barstow Memorial School is dedicated</p> <p>1934 Clarence Perry store (owned by S.E. Smith) burns to the ground</p> <p>1939 Mrs. Barstow purchases the Long farm, that will become the Mountain Top Inn</p> <p>1941 World War II begins</p> <p>1942 Mr. Barstow dies</p> <p>1945 Mountain Top Inn purchased by Bill and Margery Wolfe</p> <p>1947 Flood of 1947 (flashboards at Chittenden Reservoir Dam broke)</p> <p>1949 Barstow Agreement for Joint School</p> <p>1955 President Dwight D. Eisenhower visits Chittenden</p> <p>1957 U.S. Fish hatchery rebuilt</p> <p>1957 Chittenden Volunteer Fire Department formed</p> <p>1958 Mrs. Barstow dies</p> <p>1960 First Catholic Mass held in Chittenden</p> <p>1965 St. Robert’s Roman Catholic Church completed</p> <p>1965 Barstow School’s Junior High wing dedicated</p> <p>1973 Reservoir drained for repair</p> <p>1976 Chittenden Historical Society incorporated</p> <p>1991 Slab City Messenger (through 1999)</p> <p>1980 Chittenden bicentennial</p> <p>2002 Major rejuvenation of Barstow School</p> <p>2006 Chittenden Recreation Program initiated</p> <p>2009 Renovation of the lower level of the Grange Hall completed and reopened for public use</p> <p>2009 U.S. Fish Hatchery renamed “Dwight D. Eisenhower National Fish Hatchery.” Governor James Douglas and U.S. Senator Patrick Leahy participated in the ceremony.</p> <p>2010 St. Robert's Church closes</p> <p>2011 Tropical Storm Irene devastates the state with heavy rain and flooding</p> <p>2012 Office of emergency management established</p> <p>2013 New town office opens in renovated St. Robert's Church, and Historical Society relocates to former town office space</p>
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Figure 3. Population by Age in Chittenden, Vermont

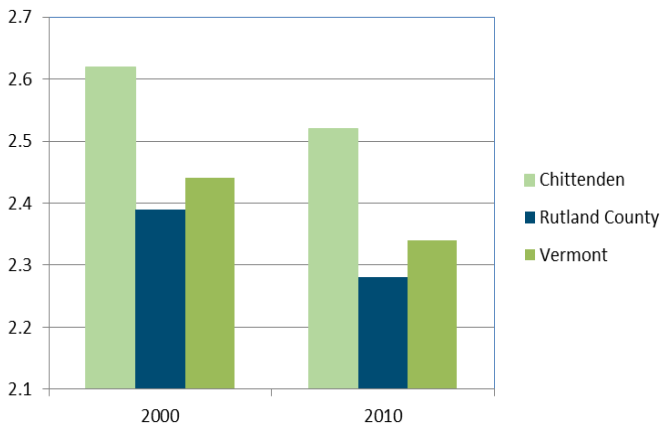


Source: US Census 2000 and 2010

Households and Home Values

As can be expected with an aging population, household size has become smaller. In 2000, the average-sized household was 2.62 persons. In 2010, the number dropped to 2.52, which is still well above the Rutland County (2.28) and State of Vermont (2.34) averages. The number of families has remained constant at approximately 74% of households. (Source: US Census)

Figure 4. Average Household Size in Chittenden, VT

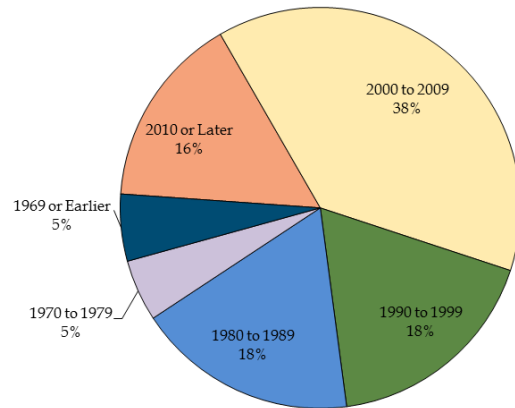


Source: US Census 2000 and 2010

With regard to housing, the Chittenden community is becoming more stable. According to the 2009-2013 American Community Survey 5-Year Estimates, roughly 89% of the population reported having lived in the same house one year ago. The

remaining roughly 7% of residents had moved within the county, 4% moved from a different state, and a very small number came from abroad.

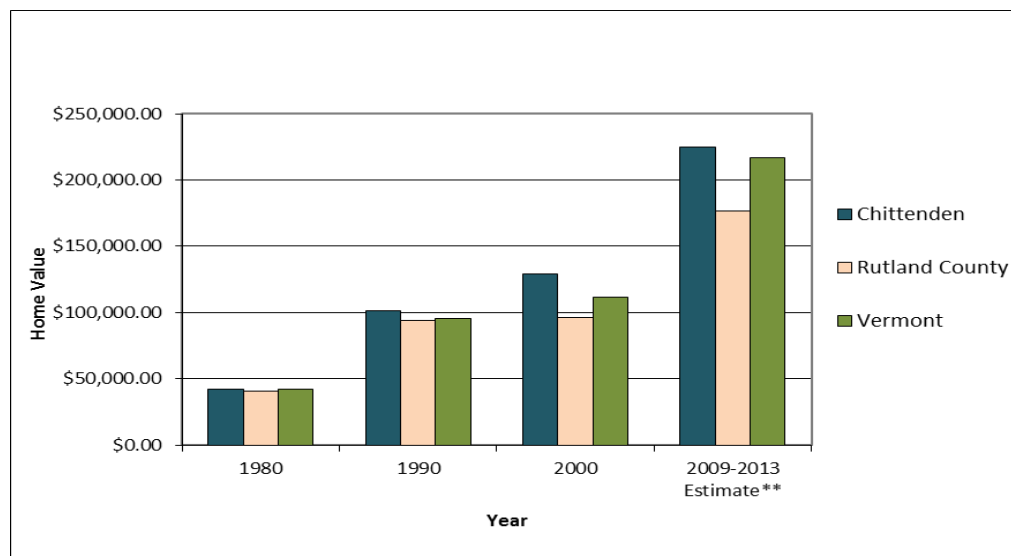
Figure 5. Year Householder Moved into Unit



Source: 2009-2013 American Community Survey 5-Year Estimates

The median home values in Chittenden continue to exceed those for the state and Rutland County, and the gap is growing significantly. Between 2009 and 2013, the median home value was estimated to be \$225,000 (Source: 2009-2013 American Community Survey 5-Year Estimates). This figure is up approximately 75% from the 2000 median home value of \$128,900. The chart below indicates this trend showing the proliferation of the high end housing market in the town.

Figure 6. Median Home Value in Chittenden, Vermont



Source: US Census, American Community Survey & Vermont Housing Data (www.housingdata.org)
 **Note: The margin of error for the 2009-2013 Estimate is +/- \$27,464.

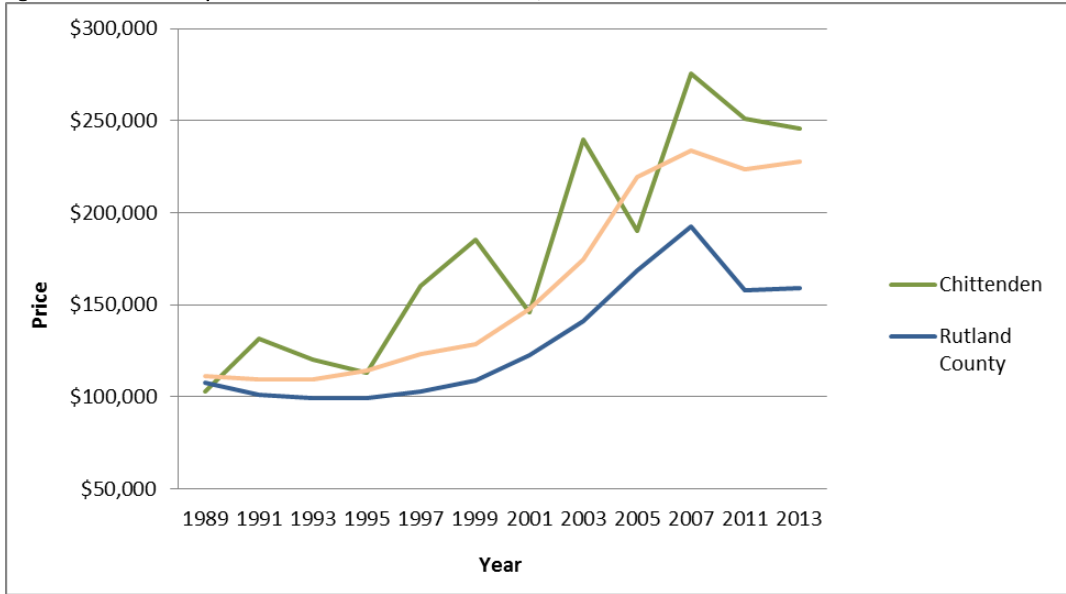
Recent Trends in Housing

Similar to many other locations in the state and county, home sale prices in Chittenden skyrocketed through 2007 and into 2008. This dramatic increase was fueled by historically low interest rates and special mortgage packages that permitted small down payments and floating interest rates. The housing bubble in all locations across the country has burst and banks holding significant amounts of mortgage-backed securities have folded, or have received government loans associated with a federal

Troubled Asset Relief Program (*TARP*). The collapse of the housing market and associated drop in real estate values, combined with an increase in foreclosures and a stagnant construction industry, has been the leading factor in creating a national economic downturn not seen since the Great Depression era.

The poor national economy has significantly impacted Vermont's high end housing market, as fewer people are buying second homes and vacation homes. This has impacted desirable areas such as Chittenden, which have higher housing unit values. Figure 7, below, illustrates the home sales and price trends. See the Housing section of this plan for more detail about housing in Chittenden.

Figure 7. Average Price of Primary Residences Sold in Chittenden, Vermont



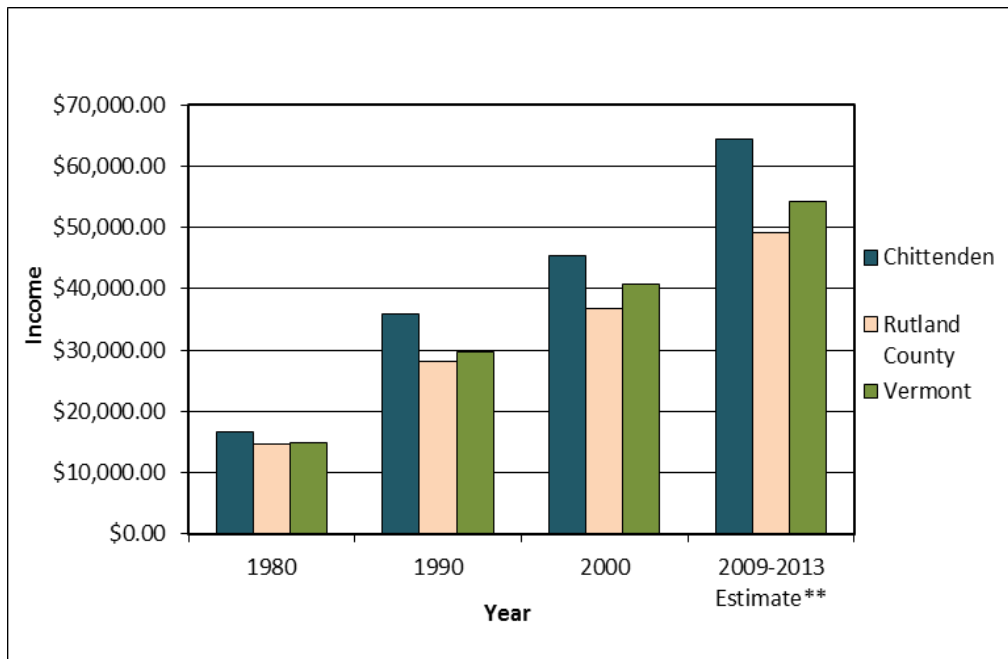
Source: Vermont Housing Data/Vermont Department of Taxes

Income

The estimated median household income from 2009 to 2013 was \$64,412 (See Figure 9, below; Source: 2009-2013 American Community Survey 5-Year Estimates). This figure is significantly higher than

the 2000 figure of \$45,313 (Source: US Census 2000) and continues to exceed the state and county levels. An estimated 5.6% of residents are below the poverty level (Source: 2009-2013 American Community Survey 5-Year Estimates).

Figure 8. Median Household Income in Chittenden, Vermont



Source: US Census and American Community Survey

Economic Development

Economic development planning helps to establish and maintain a community’s diversity and unique character. It encourages a healthy mix of enterprises to support jobs and tax revenues in the town. The town can be active in maintaining and enhancing the physical character of Chittenden by encouraging development to take appropriate forms and to occur in appropriate locations.

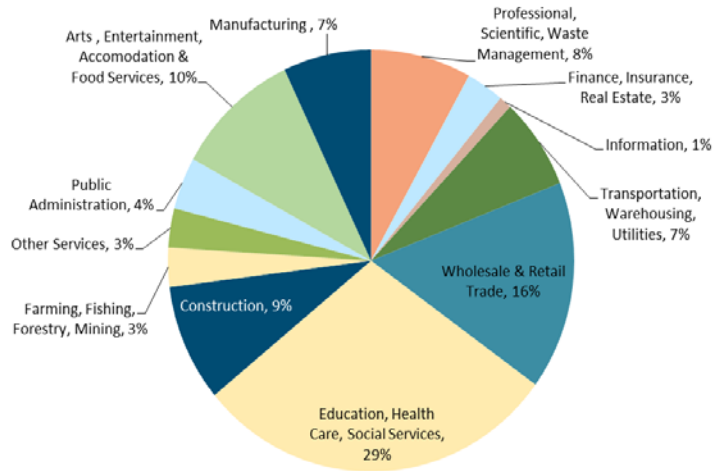
Like many other municipalities in Rutland County, Chittenden derives most of its revenue from the taxation of local property in order to support municipal services. Chittenden will need to be active in managing economic growth to ensure the future of its tax base and quality of life.

Employment

Approximately 5.8% of Chittenden workers (38 individuals) are employed in town, engaging in a variety of occupations. 94.2% of employed residents (614 individuals) work outside of town, and an additional 131 people work in Chittenden but live elsewhere (Source: US Census OnTheMap Application, 2011). For those working outside of

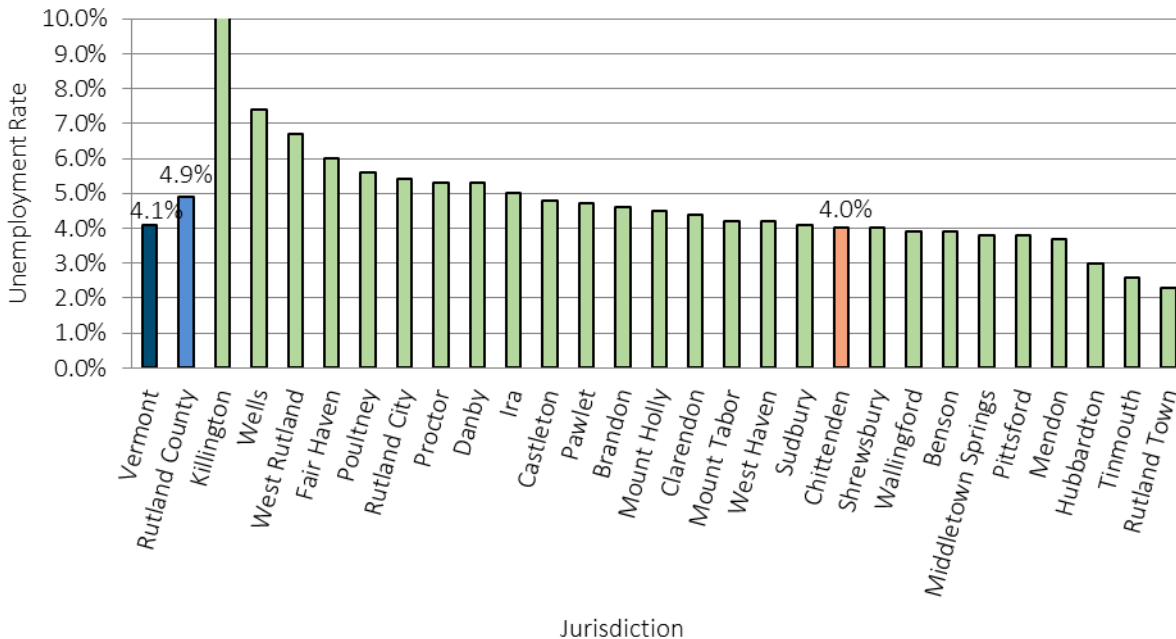
town, the average commute time is approximately 29 minutes (Source: 2009-2013 American Community Survey 5-Year Estimates). This suggests that many residents work close to the city of Rutland or at the nearby ski resorts of Killington and Pico. Figure 8 below shows the variety of occupations held by Chittenden residents. While many of the employees work outside of town, such occupational diversity is indicative of a viable and resilient community.

Figure 10. Occupations by Industry of Chittenden, VT, Residents



Source: 2009-2013 American Community Survey 5-Year Estimates

Figure 9. Unemployment Rates in the Rutland Region, 2014 Average Source: Vermont Department of Labor



The town had an average unemployment rate of 4.0% throughout 2014, which is lower than both the

Rutland County (4.9%) and statewide rates (4.1%) (Source: VT Department of Labor).

includes farming, a store, inns, auto garage, construction businesses, maple sugaring, and other home-based enterprises.

Economic Characteristics

Public Sector

Town revenues are generated primarily from the taxation of real property. Figure 10, below, shows the distribution of revenue-generating property by classification in Chittenden.

Over time, some industries of the 1800s became obsolete. Others were replaced by similar but smaller industrial and commercial enterprises, residential growth, and employment opportunity tied to the economies of the City of Rutland and the resort areas of Killington. In contrast to two hundred years ago, when most residents worked in Chittenden, the majority of residents now commute to work outside of town.

Figure 11. Classification of Parcels in Chittenden, Vermont

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Residential I (under 6 acres)	321	324	335	337	338	339	340	343	349	354
Residential II (over 6 acres)	166	168	170	172	171	173	172	171	169	170
Mobile homes (no land)	15	16	14	13	13	12	12	12	12	11
Mobile homes (with land)	21	21	21	21	21	21	21	21	22	22
Vacation I (under 6 acres)*	42	44	40	40	40	40	40	40	38	37
Vacation II (over 6 acres)*	24	24	24	24	24	24	24	23	25	25
Commercial	2	2	2	3	4	3	3	4	4	4
Industrial	0	0	0	0	0	0	0	0	0	0
Utilities – Electric	2	2	2	2	2	2	2	3	3	3
Utilities – Other	3	4	4	4	4	4	3	3	3	0
Farm	6	6	6	6	6	6	6	6	6	6
Woodland	61	56	57	53	53	52	51	51	50	49
Miscellaneous	52	63	59	60	58	56	57	56	54	56
TOTAL	715	730	734	735	734	732	731	733	735	737

Source: Vermont Dept. of Taxes and Chittenden Grand List (Form 411) * Not suitable for year-round occupancy.

Revenue for the town comes primarily from property taxes, Payment in Lieu of Taxes (PILOT) from the National Forest, town fees, delinquent tax penalties and interest, interest income, fines, recycling income, transfer station stickers, state aid, and other recipients as shown in the annual Town Reports. The Town also receives partial reimbursement from the State for property tax reductions accorded land that is in the current use program.

The maple sugaring industry has been growing in Chittenden in recent years, with four major operations in business along with many small operations. These maple farms range in size from 65 to 100 acres tapped, and around 8,000 taps each. Most solely sell maple syrup, but some are interested in expanding into value-added products. The maple syrup is often sold in bulk drums to buyers, as well as in smaller amounts via retail sales. Maple sugaring is a viable and growing industry in Chittenden, and it should be encouraged in a way that maintains forest integrity through responsible forest management.

See the *Public Facilities and Services* section of this plan for more information.

Private Sector

The make-up of the private sector economy in Chittenden is similar to two hundred years ago in some respects, most notably that Chittenden has retained its natural resource-based industries (timber and wood harvesting) and a commercial sector that

With over a decade of recent stability, The Mountain Top Inn has established itself as a preeminent

Community Survey 2015
Chittenden residents' vision for the next 15-20 years includes a strong desire to not raise property taxes, perhaps by encouraging business development in town.

4-season resort bringing guests from all over the country, as well as international visitors, to the town of Chittenden. Now comprised of several pre-existing and new vacation homes and rebuilt cabins, an event barn, beach pavilion and Equestrian and Nordic centers in addition to the original structure, expansion at The Mountain Top has been executed at every stage with the preservation of its natural surroundings in mind. The Inn provides cross country skiing and other outdoor recreation for locals as well as visitors such as tour groups, corporate meetings, and weddings.

Another key business in town is the Wooden Barrel Country Store. It is the only store in town, providing gasoline, supplies, hunting licenses, etc. Its central location in town— in proximity to the school, post office, town offices, etc.— offers a convenient range of services for residents.

Despite the decline in local employment of residents, businesses continue to operate throughout town, tourism has grown, and Barstow School remains an asset for the town and real estate market. Some residents who participated in the community forum in April of 2015 expressed a desire for more small business in town (e.g. a coffee shop), small-scale clean industry, and tourism.

See the *Private Facilities and Services* section of this plan for more information.

Economic Development Challenges

Gaps in telecommunication service, roadway limitations, and a restricting road system (e.g. there is no thruway) are all challenges to Chittenden’s economic growth. As the primary method of transport for goods and people, as well as emergency response, the road system is constrained by the lack of alternative routes and throughways.

The town’s topography and extensive stream network place physical limitations on growth. These physical characteristics are an asset in preserving the rural character of the community, a limitation on development, and a potential source of tension for community members trying to balance the desire to preserve the historically rural character of the town with the desire to promote new business in the town.

Community Survey 2015: Business

When asked what types of business development they would like in town, respondents indicated these as **most desirable**:

1. High Speed Internet
2. Family Farming
3. B&B/Inns
4. Cell Towers
5. Professional

These types of businesses were found to be **least acceptable**:

1. Commercial/Industrial Wind Turbines
2. Hotels/Motels
3. Large Scale Farming
4. Light Industry
5. Commercial/Industrial Solar Panels
6. Commercial/Retail

Goal

- Encourage the development and expansion of appropriate and compatible business and industry.

Objectives

- Support existing business.
- Encourage growth and a balance of small, locally-owned business and light industry to stimulate the local tax base and improve local employment opportunities.
- Encourage a diversified local economy.
- Facilitate public improvement projects which will promote economic development.
- Pursue jobs and businesses which are compatible with a small, rural community.
- Support businesses which maintain the working landscape, such as agriculture, forestry, and value added products.

Tasks

- Promote the grouping of related and compatible businesses and industries, and discourage strip development.
- Attract business which will help reduce the tax burden on property owners without requiring significant public expenditure.
- Encourage commercial architecture design that is consistent with the town’s rural character.

Public Facilities and Services

According to the 2000 *State Planning Manual for Vermont Municipalities*, “Community facilities and services are provided by the municipality (or available within the municipality) for the health, benefit, safety and enjoyment of the general public. This includes transportation, schools, parks and recreation facilities, libraries, public water supply and waste disposal systems, solid waste management, utilities and energy, police and fire protection, health and human services and general administrative services.”

Services and facilities have a significant effect on the local quality of life as well as the community’s ability to accommodate development and grow in an orderly and appropriate manner. Careful planning is essential for community facilities and services in order to meet local needs and community goals for future growth. The Chittenden Town Plan shall promote and encourage the development of an integrated and efficient utilities and infrastructure system to provide the services required by both residential and commercial users.

Municipal Facilities/Buildings

The Town of Chittenden owns the following properties:

- Town Office, 260 Chittenden Rd.
- Town Hall, 339 Holden Rd.
- Grange Hall, 3 Lower Middle Rd.
- Frederic Duclos Barstow Memorial School, 223 Chittenden Rd.
- Public Library (located within the Barstow School at 223 Chittenden Rd.)
- Historical Society, 337 Holden Rd.
- Town Garage and Transfer Station, Holden Rd.
- Four cemeteries: Baird Cemetery; Bump Cemetery; Horton Cemetery, and Wetmore Cemetery.
- Four woodlots: 115-acre Michigan Brook woodlot; 202-acre Lead Mine woodlot; 110-acre Mount Carmel woodlot; 138-acre Rutland Grammar School woodlot.

- Two town lots: 0.16-acre Hotel Lot at corner of Mt. Top Rd. and Holden Rd.; and 0.4-acre lot on Dugway Rd.
- Gravel pit (3.3 acres), Stoney Hill Rd.

Source: 115th Annual Report of Chittenden, Vermont for the Fiscal Year Ended June 30, 2008. p 68.

Future Needs - Municipal Buildings/Land Use

The current Town Office needs to be replaced and/or upgraded. The following is a plan as it pertains in part or in whole to town buildings, town services and land use. This plan, when completed, will serve the needs of the people of the town of Chittenden and beyond for many years to come.

The St. Roberts Church held its’ last service on August 22, 2010. At the time of this writing it appears favorable that the town will have the option to acquire the St. Robert’s Church and all its lands. All aspects of this plan are subject to review and change.

The Town Office

The Town office could be located in the former St. Robert’s Catholic Church, and could be fitted with:

- A) Town Clerk and Treasurer Office.
- B) Listers’ Room/Office.
- C) Auditors’ Room/Office.
- D) Assistant Town Clerk Office.
- E) Rooms for attorneys and others searching deeds, titles, or any town records.
- F) Planning Commission Room/Office.
- G) Lobby for the public to address their needs and questions to the Town Clerk.
- H) Appropriately sized conference/meeting room (for board meetings, etc).
- I) Secure, fire-proof record storage facility.

Grange Hall

When totally refurbished, the Grange Hall will provide:

Lower Level:

- A) A full service kitchen and banquet room with a capacity of 50 to 60 people.
- B) Good general space lighting as well as track lighting throughout, all of which will be dimmable for any special lighting needs.
- C) Restroom facilities compliant with the Americans with Disabilities Act (ADA).
- D) Custodial room with all needed appurtenances for cleaning and maintaining the spaces.
- E) Lower level ADA entrance.
- F) Fully heated and air conditioned with ventilation to be in compliance.
- G) Elevator to the upper level and stairs as well.
- H) Mechanical and utility room that houses the HVAC equipment, electrical service and plumbing equipment.

Upper Level:

- A) An open hall which will accommodate many options and possibilities for 70 to 80 people.
- B) It will have an ADA entrance in the front of the building as well as an entrance on the new addition at the south end.
- C) Elevator to get to lower level if required as well as a stairwell.
- D) Full ADA bathroom facilities.
- E) Mechanical room over south addition providing heat, air conditioning and ventilation to be in compliance.

This building will offer space for a variety of celebration festivities as well as meetings, seminars, arts and craft shows, emergency shelter and many more community uses.

South Town Hall

This building will be totally renovated and refurbished to the same standard as the Grange hall.

Lower Level

The lower level could be renovated to meet the needs of a new town library with all required

appurtenances including building service and maintenance.

Upper Level:

The upper level will provide the needed space and accommodations for the Historical Society.

Existing Town Office

This building could be renovated or torn down be torn down to provide parking and green space.

Equipment Shed

The equipment shed would be torn down.

Goals

- Provide the highest quality public facilities and services to meet anticipated growth and protect the health, safety and welfare of town residents, within the context of fiscal capabilities and land use planning objectives.
- Repair, maintain and restore existing town facilities.
- Preserve the rural quality of the town.

Objectives

- Improve the capacity of the Chittenden Town Government to perform effectively.
- Ensure that the location and capacity of infrastructure is consistent with other planning goals, such as protection of natural resources, the provision of quality housing for all residents and the recruitment of appropriate business to Chittenden.
- Protect the health, safety and welfare of Chittenden residents through the provision of high quality municipal services.
- Provide the town with adequate waste disposal facilities and manage costs effectively.
- Improve the efficiency of town operations as well as public, commercial and residential buildings.
- To plan for, finance and provide an efficient system of public facilities and services to meet future needs.

Tasks

- Grange Hall: Appropriate uses and rules for use of the building have been developed.
- Pursue options for addressing Town Hall and Town Office needs.
- Investigate the possibility of moving the South Chittenden Town Hall (out of flood/dam failure hazard zone) and restoring this building.
- Take steps to advance and ensure public safety at all town-owned properties
- Conduct a review of actual and potential use of all town properties and liability issues at each municipal property (including gravel pit, buildings and transfer station). Assess and, if necessary, update insurance coverage for all town properties.
- Work to develop by-laws and ordinances that advance the goals of this Town Plan.

Health Officer
State Fire Warden
Assistant State Fire Warden
Tree Warden
Weigher of Coals
Representative to Rutland Regional Ambulance Service
Library Trustees
Town Service Officer
School Directors (three, elected)
School District Treasurer (appointed by School Board)

Source: Chittenden 2008 Town Report

Municipal Services

The elected five-member Selectboard is the legislative body that oversees the governing of the town. The elected town clerk and treasurer provide daily administrative functions as enumerated by state law. Other town officials are listed below.

Town Moderator (elected)
School District Moderator (elected)
First Constable (elected)
Second Constable (elected)
Road Commissioner (elected)
Delinquent Tax Collector (elected)
Listers (elected)
Auditors (three, elected)
Trustee of Public Funds (elected)
Civil Defense Chairman
Town Agent (elected)
Grand Juror (elected)
Planning Commission (appointed by select board)
Representative to the Rutland Regional Planning Commission (appointed by select board)
Justices of the Peace (seven, elected)
Cemetery Commissioners (three, elected)
Animal Control Officer (Rutland County Sheriff's Dept)
Energy Coordinator
Fence Viewer

Goal

- Increase public awareness of community events (cultural/social/governmental).

Objective

- Enhance communications of local events.

Tasks

- Develop an internet communication tool to supplement the *Chittenden Chit Chat* newsletter between publications. The electronic news supplement would alert the public to meetings and events in town.
- Investigate establishing a town website.
- Provide more public information signs throughout town.

Solid Waste Disposal (Transfer Station)

Chittenden is a member of the Solid Waste Alliance Communities (SWAC), which serves ten towns in the area. Its objective is to resolve solid waste management issues in a cost effective manner. In 2007, SWAC became a member of the Produce Stewardship Institute designed to reduce health and environmental impacts by providing educational training, distributing Healthy Homes Cleaner kits, maintaining a website with current information, hosting collection events and obtaining grants to defray costs of hazardous waste related activities. The Select Board's Solid Waste Disposal Committee, and transfer station attendants work closely to coordinate the safe and proper disposal of

all forms of waste in accordance with established state requirements. The Transfer Station is licensed and meets State of Vermont's regulations. There is an annual dumping fee for all Town property owners and residents who use the Transfer Station.

In 2012, Act 148—Vermont's Universal Recycling Law—was passed. The intent of the law is to divert recyclable items, leaf and yard debris, and food scraps from landfills. By July 1, 2015 all recyclables will be banned from landfills; by July 1, 2016 leaf and yard debris and clean wood waste will be banned from landfills; and by 2020 food scraps will be banned. Facility owners and trash haulers will need to collect and manage these wastes accordingly. Municipalities are also required to implement variable rate pricing (aka "pay as you throw") based on volume or weight by July 1, 2015. The Town will need to work with the SWAC to ensure compliance with Act 148.

Future Needs

The anticipated increase in the number of households -- both seasonal and year-round -- will be met by an increase in the amount of solid waste and, subsequently, an increase in disposal and transportation costs. Recycling is encouraged to reduce costs.

Goal

- Keep pace with town needs for solid waste disposal and recycling demands.

Objective

- Provide sufficient service.

Task

- Improve town's recycling facilities and transfer station capacity.

Emergency Management Services

Disastrous events, both natural and man-made can occur at any time in Chittenden, with little to no warning and with wide-ranging impacts for both the Town and the entire region. Proper emergency management practices can help lessen the impacts of future events in the town, by addressing four key phases of emergency management: hazard mitigation, preparedness, response, and recovery .

Hazard Mitigation

Hazard Mitigation includes any sustained action that reduces or eliminates long-term risk to people and property from natural or human-caused hazards and their effects. Mitigation planning begins with an assessment of likely hazards and then targets activities to reduce effects of these hazards. In order to qualify for FEMA Public Assistance Funds, after a declared federal disaster, a town must submit a Hazard Mitigation Plan to the Vermont Hazard Mitigation Officer and to FEMA for review and final approval. This plan must be updated every five years.

The Emergency Management Director, working with the Chittenden Planning Commission completed this plan and submitted for review in June 2014. Preliminary comments have been received and changes made for resubmittal. Final approval is pending.

The Plan identifies the most the most likely types and locations where these hazards are most likely to take place. The Plan also sets forth a prioritized list of tasks to be completed to reduce the damage from future hazard events. The complete Plan is available on the Town of Chittenden website.

High risk hazards in Chittenden include flooding and fluvial erosion, severe weather events with power outages and uncontrolled wildfires. While the likelihood is low, failure of the Chittenden Dam would cause catastrophic loss of life and property damage in Chittenden as well as several downstream communities.

Priorities identified in the Plan include upgrading culverts/bridges as needed to reduce the risk of flooding, flood resiliency actions to protect river

corridors from degradation and dam safety such as a warning siren, and several other mitigation projects.

A Better Back Roads Grant will assist the Town in updating an inventory of its bridges, roads and culverts and develop a capital plan to maintain these critical infrastructure. The Town annual adopts a VT Agency of Transportation codes and standards for road maintenance that ensure sustainable practices. Having these programs in place and keeping them updated, reduces the Town's match against state dollars for certain public works maintenance projects.

Preparedness

Preparedness includes activities and measures, such as training, plans and procedures, and equipment, taken in advance of an incident to ensure effective response. It includes emergency personnel acquiring suitable equipment and training and exercises. Preparedness is also a responsibility of residents, business and government. Simple preparedness measures, like having disaster supplies on hand, installing smoke detectors and generators, having emergency fuel for generators and vehicles and knowing basic first aid will all help to lessen the impact of a disaster. Preparing emergency plans is also a preparedness activity.

In 2012, Chittenden created an Office of Emergency Management and appointed an Emergency Management Coordinator to assist the designated Emergency Management Director. Since that time, the current EMD has created an Emergency Management Team consisting of both the EMD and EMC along with the Fire Chief and The town Health Officer. Law enforcement would be added when available.

Chittenden's Local Emergency Operations Plan (LEOP) was last updated and adopted in April 2015. This plan documents all the steps that need to be taken in the event of an emergency and includes a complete listing of contacts, selected methods for alerting the public, locations that are to be used as shelters and emergency operation centers, emergency equipment available, and a map of the

evacuation routes. The LEOP identifies American Red Cross approved emergency shelter sites at the Barstow Memorial School, the North Chittenden Grange Hall, and the Church of the Wildwood. Also listed in the plan are high risk populations, vulnerable areas, emergency contacts, and local emergency operation center sites (Chittenden Municipal Office and Barstow Memorial School).

The Emergency Management Director worked closely with Green Mountain Power to update the Emergency Action Plan for Chittenden Reservoir. This plan was adopted in March of 2014 and updated in March 2015. A communication plan was recently developed for notification from GMP of controlled water releases from the reservoir to lower the water level.

Response

Response activities address the short-term direct effects of an incident and seek to save lives, protect property, and meet basic human needs. This includes fire, emergency medical services, law enforcement and other emergency response activities which are discussed below. Based on the town's small population and rural setting, response to some types of emergencies will not be as quick as they might be in larger communities. Response operations are greatly enhanced by proper preparedness. Most emergencies of any scale will require towns to work together, and often to work with state and federal agencies. Practicing with these partners before an actual emergency is critical to smooth emergency operations.

Fire Protection

The Chittenden Volunteer Fire Department was established in 1957 to protect lives and property from fires and other disasters. A First Response Emergency Squad is part of the department and is operated to handle medical and/or traumatic emergencies. The department is made up of active members (trained firefighters), inactive members, and the non-firefighting First Responders. From time to time the department also has junior firefighter members as part of its makeup.

The department is incorporated under the rules of the IRS as a not-for-profit corporation and owns all of its equipment, and inventory of which follows:

- Scott Airpacks - self-contained breathing apparatus
- Portable water pumps for fire fighting
- Portable generators; 1 - 3,000 watt; 1 - 5,000 watt quartz floodlights
- 1,000-gallon portable holding tanks for water
- 3,300 feet of 2-1/2" hose
- 1,500 feet of 1-1/2" hose
- 2-way radios, one in each vehicle
- 35-foot extension ladder
- 1998 Chevrolet GMC 1500-gallon capacity tanker
- 1974 International Pumper with 750-gallon capacity tank and 750-gpm pump
- 1979 GMC Pumper with 750-gallon capacity tank and 750-gpm pump
- 1966 American LaFrance 1000-gpm pumper
- 1984 Ford Econoline Van for First Response
- Automatic electronic defibrillator
- 1983 GMC Suburban First Response Vehicle for Basic Life Support
- National Fire Protection Association approved Protective Clothing and Equipment for all active firemen

The department responds to approximately 25 calls annually and has a mutual aid pact with the surrounding towns. There is an automatic mutual aid procedure in place with Rutland Town and Pittsford, where both towns are automatically called if there is a structure fire in Chittenden. On the easterly slopes, Pittsfield services all calls at a charge. Town fire protection is adequate and constantly being appraised by the officers of the department. The department is an active member of both the Rutland County Firefighter's Association and the Vermont State Firefighter's Association.

Although the Fire District currently operates independently, it is in the public interest that the organization remains knowledgeable and aware of future growth trends and development patterns in Chittenden. Location, access to, and density of a

new development should include provision for effective fire protection.

Emergency Response

Chittenden First Response has served the community for nearly 30 years. The coverage area includes all of Chittenden and East Pittsford and responded to 55 calls in 2008. There are currently eight members on call including licensed Emergency Medical Technicians and First Responder Care Attendants. The Regional Ambulance Service out of Rutland also serves the area.

The Town of Chittenden has been moderately active in its emergency management responsibilities. Because of the town's small population and rural setting, response to some types of emergencies will not be as quick as they might be in larger communities.

Police Protection

At present the town may call on the Rutland County Sheriff's Department and the Troop C Barracks of the Vermont State Police in Rutland Town for assistance. However, local law enforcement is encouraged. Chittenden averages approximately 15 criminal incidents per year.

Recovery

Recovery is the process of rebuilding, restoring and rehabilitating the community following a disaster situation. The Town should maintain records of costs incurred in the recovery from disasters, including road and culvert repairs. This information is reported to the Department of Emergency Management and Homeland Security, and the local Agency of Transportation. This aids the state in applying for presidential declarations of disasters in larger events and can make the town eligible for substantial reimbursement of costs.

Vermont's Emergency Relief Assistance Funding (ERAF) provides state funding to match federal Public Assistance after federally declared disasters. Eligible public costs are reimbursed by federal taxpayers at 75%. For disasters after October 23, 2014, the State of Vermont will contribute an additional 7.5% toward the costs. If the Town takes

specific steps to reduce flood damage, the State will contribute 12.5% or 17.5% of the total cost based on these requirements. Currently, Chittenden is at 12.5% but work has already started to address steps to reduce flood damage and bring that number up to 17.5%.

12.5% for communities who have adopted four mitigation measures:

1. National Flood Insurance Program (participate or have applied)
2. Town Road and Bridge Standards-(annually certify adopted standards that meet or exceed the standards in the current 2014-2016 VTrans Orange Book: Handbook for Local Officials
3. Local Emergency Operations Plan (adopt annually after Town Meeting)
4. Local Hazard Mitigation Plan-Adopt a FEMA-approved local plan (valid for five years) or, submit a draft plan to FEMA Region 1 for review.

17.5% ERAF funding for eligible communities that also have adopted:

1. Maintenance of an active rate classification (class #1 through #9) under FEMA'S Community Rating System (CRS) that includes activities that prohibit new structures in mapped flood hazard zones, OR;
2. Adoption of a Fluvial Erosion (FEH) or other river corridor or floodplain protection bylaw that meets or exceeds the Vermont Agency of Natural Resources FEH model regulations and scoping guidelines.

Future Needs

According to the Rutland Regional Plan, as the average age in Rutland County increases, the impact on emergency services will grow in step. In addition, the aging population will likely mean the retirement of many volunteer firefighters and rescue personnel. Response organizations will have to find ways to attract more new volunteers.

It is expected that the trend towards more scattered development will continue. This will have both positive and negative impacts. The positive is that with more scattered housing and business development, the odds of single-structure fires spreading will be minimal. The negative is that for many more secluded houses, fire departments and rescue squads will be faced with longer trip and more difficult access.

Goal

- Provide fire, police and rescue/recovery services appropriate to the Town's need.

Objective

- Expand the existing volunteer Fire Department and First Response membership.

Tasks

- Determine the means to expand volunteerism and to provide paid daytime coverage.
- Determine options for providing additional fire protection.
- Examine, update, and re-adopt the LEOP annually.
- Determine the feasibility of a fire department substation in North Chittenden.

Health and Human Services

The Town of Chittenden does not have any health service facilities. The town's close proximity to the City of Rutland gives residents access to services such as a hospital (Rutland Regional Medical Center), medical and dental offices, mental health clinics, day treatment centers, residential care facilities, visiting nurses and offices of the State Department of Health.

Likewise, the town has no social service agencies. Again, residents take advantage of the town's proximity to Rutland when they require the services of agencies capable of helping people with financial,

social or emotional problems, community action organizations, youth service bureaus, parent child centers, offices of the State Welfare Department, the State Department of Social and Rehabilitation Services and the court system, except for Justices of the Peace.

Library Services

See the Cultural Resources section for information on the Chittenden Public Library and Barstow School Library.

Education Services

School Districts in Vermont are legal municipalities and, as such, operate independently from the towns in which they are located.

Frederic Duclos Barstow Memorial School

The Chittenden Town School District is operated by an elected three-member board of School Directors. Empowered by a joint contract created in 1949 with the Town of Mendon and Pittsford, the Chittenden School Directors and Mendon School Directors operate the Frederic Duclos Barstow Memorial

School. (Pittsford has not sent students to Barstow since the early 1980s and therefore does not have any directors on the board at this time.) The school serves grades K-8 and houses a pre-kindergarten program which is administered by the supervisory union. The school was a gift to the town from Mr. and Mrs. William S. Barstow in 1933. They built the school in memory of their only son, Frederic. In addition to the students of Chittenden and Mendon, Barstow serves a limited number of tuition students from surrounding communities.

Renovations and maintenance of the facility have been ongoing. Additional classrooms and facilities were added in 1937, a major addition was completed in 1939, and a new wing, the Middle School, was built in 1965. In 2002 a rejuvenation project brought the building up to modern standards. Renovations included the addition of a middle-school sized gymnasium, a new cafeteria, new classrooms, and additional offices while maintaining the classic appeal of the building. The upper soccer

field was reconstructed in 2005, and in 2008 the boiler room was relocated and modernized.

Barstow won five Medallion Awards in a row for exceptional achievement, and the students consistently earn Terra Nova scores in the “excellent” and “exceptional” ranges. More information can be found on the school’s website: <http://barstow.k12.vt.us/> and the Vermont Dept. of Education website: <http://education.vermont.gov/>

Student Transportation

The Barstow School operates a bus service for K-8 students. Additionally, the school has participated in the Safe Routes to School program which encourages children to walk or bike to and from school routinely and safely. A 2006 Safe Routes to School grant provided money and technical support from the state and the Rutland Regional Planning Commission.

High School

The Town of Chittenden does not have a high school. All high school aged students are eligible for tuition to a non-parochial school of their choice. The majority of high school students in Chittenden attend Rutland High School in the City of Rutland. Others attend Proctor High School, Mill River Union High School and Otter Valley Union High School, among others. Students also have the option of attending Stafford Technical Center in Rutland, for specialized technical training in a wide variety of fields, or attending a private school (a tuition cap is in place for private school attendance). The Chittenden School District operates a bus for high school students on a limited-run basis.

Higher Education Opportunities

There are no post-secondary education institutions in Chittenden, but there are several colleges in the Rutland Region: Castleton State College; College of St. Joseph; Community College of Vermont; and Green Mountain College.

Informal learning opportunities are available through the Chittenden Public Library, Rutland Free Library and other area libraries. Cultural events are offered year-round in the town and region.

Figure 12. Town of Chittenden Enrollment for High School Students 2009-2010

High School	Students
Rutland High School	55
Success School	0
Stafford Technical Center	8
Proctor High School	2
Mill River Union High School	15
West Rutland High School	0
Otter Valley Union High School	2
Fair Haven Union High School	0
Woodstock Union High School	1
Berkshire School	0
Rutland Learning Center	0
Northfield/Mr. Hermon	1
Deerfield Academy	0
Univ. of North Carolina School of the Arts	1
Hyde School	0
Kimball Union Academy	0
Vermont Academy	1
Total Number of High School Students 2009-2010	86

Source: Chittenden School Board, March 2010

Goal

- The community will, in partnership with the school, promote in all students the knowledge and skills necessary to become independent thinkers, lifelong learners, and responsible and productive citizens.

Objective

- *Continue* cooperation between the school board and town to promote education and support educational facilities and infrastructure.

Tasks

- Advance infrastructure to promote safe pathways for students.
- Work with School Directors to provide safe and sufficient facilities

Federal Services

Postal Service

There is one post office in Chittenden (ZIP code 05737) which is located at 198 Chittenden Road and has limited hours. Two additional post offices deliver within Chittenden: the Rutland Post Office (ZIP code 05701) and the Pittsford Post Office (ZIP code 05763).

National Fish Hatchery

The Dwight D. Eisenhower National Fish Hatchery was established in 1906 and began production in 1909. For most of its 100+ years of operation, its official name was the Pittsford National Fish Hatchery, although it is located completely within the Town of Chittenden. In 2009 it was renamed in honor of President Eisenhower who visited the hatchery in 1955 and subsequently ensured funding was provided to improve the facility.

The fish hatchery is an important cultural, historic, and recreational facility for the town in addition to its important function in the state’s and region’s fish management efforts. See the History, Recreation and Cultural Resources sections for more information about the fish hatchery and its importance to Chittenden and the region.

National Forest

The National Forest Service manages the 29,465-acre Green Mountain National Forest (GMNF) in Chittenden. See the Recreation section and Maps for more information on the GMNF.

Federal Aviation Administration (FAA)

An FAA aircraft beacon is located off Beebe Hill Road.

Goals

- Support functions of the National Fish Hatchery, including its role as a tourist attraction.
- Continue to work with National Forest for sustainable use of the forest by the town and the general public.

Private Facilities and Services

Water Supply and Disposal

Currently on-site wells and springs provide the water for homes, businesses and public buildings in Chittenden. On-site septic systems provide for sewage disposal for individual homes, businesses and all public buildings in town.

Future Needs

The town may have a need for public sewer facilities in the future, specifically for the Barstow School (public building) and built up areas of South and North Chittenden.

Goals

- Meet the water supply and disposal needs of a growing community
- Meet state safety regulations pertaining to safe water standards
- Ensure the health and well-being of the community.
- Enhance desirability of the housing market in Chittenden.
- Provide proper planning to accommodate population growth and new facilities
- Promote land conservation and environmental protection in conjunction with development.

Objective

- All developed properties should maintain compliance with state and local regulations for drinking water and sewage disposal.

Tasks

Establish and maintain a record of identified contaminated water supplies in Chittenden, as well as a listing of those areas known not

to possess an adequate potable water supply source.

- Assist in achieving minimum safety and sanitary standards for existing facilities
- Restrict development in areas of severe limitations for septic systems.
- Study the feasibility of establishing a public wastewater facility to serve public and private buildings, especially Barstow School, in the population centers of Chittenden

Electric Service

See the *Energy* Section in this plan.

Telecommunications

New developments in the field of telecommunications continue to have major implications for the town. Of particular note for this plan are the impacts on land use, emergency preparedness, transportation and economic development. Telecommunications encompasses a broad range of technologies, including telephone lines, digital cable, towers, repeaters, antenna, and satellite receivers. The industry is in a constant state of flux, with new technologies emerging on an ongoing basis, providing new services that will require new and improved infrastructure.

Cable Service

Cable services are available in some parts of town. Comcast is currently the provider of cable services in Chittenden.

Cell Service

Cellular service is not available throughout the Town, and is of inconsistent quality. The Local Hazard Mitigation Plan identifies a plan for cell service.

Future Needs

A key trend occurring in the telecommunications industry is an increased use and convergence of technologies – packaging phone, internet access and television services together. This will result in new opportunities and challenges. Over time, most current facilities (especially towers) will become

obsolete and will need to be retrofitted or replaced by new structures.

Goal

- Make broadband service and cell phone service uniformly available in all parts of town.

Objectives

- To provide the technology for Chittenden businesses, municipal entities, and residents to be competitive in an economy increasingly dominated by technology.
- To ensure that school children have the technology to effectively meet their education responsibilities.
- Increase available technologies, making homes in Chittenden more desirable to prospective home buyers and home-based businesses.

Tasks

- Work to expand existing cell phone service coverage.
- Advocate infrastructure sharing by telecommunications facilities in lieu of new towers and other structures where possible.
- Work with surrounding communities to encourage providers to increase telecommunications infrastructure, thereby bringing their services to Chittenden.
- Work cooperatively with surrounding towns and the Legislature to bring enhanced technology services to town.
- Develop a plan for the disposition of unused or abandoned telecommunications facilities.

Service Organizations

Chittenden Community Association

The Chittenden Community Association is a non-profit organization that performs various services to benefit the community. Its principal efforts are:

- Planting and tending to flowers in public spaces around town.

- Providing gifts and food boxes for Chittenden families that could use assistance during the holidays.
- Contributions when fire or other emergencies create special needs.

Funding for the organization depends on donations.

Chittenden Bone Builders

Bone Builders is a strength-building program focused on using free weights to build bone density and reduce and/or reverse the effects of osteoporosis. The Bone Builders program in Rutland County is sponsored by the Retired and Senior Volunteer Program (RSVP), which provides weights for the several class sites around the county and training for volunteer instructors who teach at each location. In Chittenden, trained instructors lead the classes which take place in the South Chittenden Town Hall.

Chittenden's Senior Citizens

The Chittenden's Senior Citizens is an active group of residents all sixty years or more of age. Members join together for weekly meals and also to enjoy other activities such as the Bearor's annual fishing derby and special events throughout Vermont. (Source: Chittenden 2005 Town Report, page 1)

Churches

Chittenden is home to a number of churches.

- Mt. Carmel Community Church
- North Chittenden (Holden) Wesleyan Methodist Church
- Church of the Wildwood, Methodist

Child Care

Children are fundamentally important to a town's future and will be a factor in the growth of the community. Because many families require some form of child care services, the availability, accessibility and quality of affordable day care could affect the town's ability to attract and retain families with young children. Currently within Chittenden there is one registered home provider in town and one licensed provider, which is an early childhood preschool at Barstow School (Source: Bright Futures

Child Care Information System). Other child care providers are available throughout the region.

Current Status

Children under the age of five make up 3.9% of Chittenden’s population. This figure has declined significantly, from 9% in 2000. Families with children under the age of 18 comprised 29.5% of Chittenden households. (Source: US Census 2010)

Figure 13. Children in Chittenden

Age	Population
Under 5 years	49
5 to 9 years	81
10 to 14 years	103
15 to 19 years	85

Source: US Census 2010

It is difficult to assess the need for child care facilities in Chittenden because 94.2% of employed residents commute to other communities for work. It is assumed that many of these parents choose to have their children cared for in facilities near their workplace. Throughout the Rutland Region there are approximately 85 registered home care providers and 69 licensed child care centers, which include early childhood and school-age care programs. Rutland City accounts for nearly half of the capacity of the region’s providers, with 30 registered homes and 27 licensed centers. To improve the quality of services, Vermont has established the STep Ahead Recognition System (STARs) program to recognize regulated child care, preschool, and afterschool programs that take measures to exceed state standards in providing services to children and families. STARs ratings range from 1 to 5 stars, based upon their success in five areas of performance (e.g. staff qualifications). Roughly half of the child care providers in the region participate in STARs.

Future Needs

Chittenden’s socio-economic profile suggests that the number of children needing child care facilities will continue to remain stable, necessitating the continued demand for quality child care and to support private child care establishments. There are critical issues regarding child care that should be considered in Chittenden. First, low income families have difficulty accessing child care and afterschool programs, due to financial constraints, lack of

transportation, and the demands placed on working parents. Middle income families also struggle to pay for child care. Statewide from 2003 to 2012, market rates for a preschool age child in a licensed child care center increased \$140 per week to \$200 (43.9% increase), and rates for a preschool age child in registered home care increased from \$106.25 to \$150 per year (41.2% increase) (Source: 2012 Vermont Child Care Market Rate Survey). Another deficiency is specialized child care services for infants as well as children with special needs. Lastly, child care providers struggle financially due to insufficient state and federal funding, and workers are paid relatively low wages.

Goal

- Meet residents’ demand for child care services.

Objective

- Support in-town child care, as appropriate.

Task

- Work to ensure all state standards are met or exceeded to provide the best possible child care

Transportation

A transportation network is comprised of all modes of transportation that provide access to land and mobility to residents of an area. A good transportation system, by facilitating accessibility and the movement of people and goods, contributes to the scenic landscape, settlement patterns and economic well-being. The rural character of Chittenden is supported in large part by its network of rural roads comprising the town highway system. The transportation plan must be considered in terms of its environmental and social impacts and in conjunction with other elements of the Town Plan.

Access to Chittenden is limited to two major roads. Because of this limited access, the traffic in the town is comprised mostly of individuals visiting or living in Chittenden. This lack of through traffic helps to protect the small town feel and atmosphere of the town.

Highways and Roads

Roads constitute the most significant component of Chittenden's existing transportation system, providing corridors for public transportation, bicycles, pedestrians, as well as automobiles and trucks. The town is unique in that there are no state highways located within its borders except for 0.142 miles of Route 73 in the far northeastern section of the town.

The most heavily traveled road in Chittenden is Chittenden Road (Major Collector). Power House Road, Holden Road and Furnace Brook Road are also classified as Major Collectors. Dam Road and Mountain Top Road are both classified as a Minor Collectors. There are approximately 33 miles of roads in the Town of Chittenden. The town highway department has two full time employees in addition to the elected Road Commissioner.

Town highways are, by state legislation, also categorized by their administrative class 1, 2, 3, and 4. Local towns have legal authority to define access on all Class 2, 3, and 4 roads, and share jurisdiction on Class 1 roads. Chittenden, Holden, Dam and Furnace Brook Roads are all Class 2. The functional

and administrative classification of roads should be a consideration when planning for growth.

Chittenden has 0 miles of Class 1 highway; 10.78 miles of Class 2 highway; 18.96 miles of Class 3 highway, 3.02 miles of Class 4 highway; 8.710 miles of legal trails; and 0.142 miles of state highway.

Vermont Road Classifications

Class 2 Town Highways - those town highways selected as the most important highways (after state roads) in each town. As far as practicable, they are selected with the purpose of securing trunk lines from town to town and to places that by their nature have more than the normal traffic count.

Class 3 Town Highways - these make up the majority of local roads. The minimum standard for Class 3 highways are a highway negotiable, under normal considerations, all seasons of the year by a standard manufactured pleasure car. This would include, but not be limited to, sufficient surface and base, adequate drainage, sufficient width, and suitable for maintenance.

Class 4 Town Highways and Trails - includes all other town highways. The members of the select board determine which roads will be Class 4 town highways. Town maintenance is not required of Class 4 roads except for culverts.

State Highways – designates a state system road.

Town Garage -

Park and Ride Lot - provides free parking spaces so commuters can park and meet their carpool or vanpool, bicycle or walking group. It is a gravel lot with 25 parking spaces, located at the North Chittenden Grange Hall on Lower Middle Road.

Infrastructure Conditions

In general, paved town highways in Chittenden are maintained. The town maintains gravel roads to a satisfactory standard as well. Portions of Chittenden Road, Power House Road and Holden Road have poor sufficiency ratings. (Source: VT Department of Transportation, 2008)

The sufficiency rating method evaluates the adequacy of each section of highway by measurable standards and provides a numerical index. This also allows for a method to compare one section of highway with another. A section of highway that meets all minimum standards and is completely adequate in all aspects rates as 100. Any deficiency in the highway that affects the structural condition, efficient movement of traffic/service, or safety, reduces the rating according to the degree of inadequacy when compared to a uniform set of standards.

Bridges

The ownership of bridges determines responsibility for their maintenance. Bridges with spans of 20 feet or more are generally eligible for federal funding, while bridges (or culverts) with spans greater than six feet but less than 20 feet are generally eligible for state funding. Chittenden has a total of 21 bridges, including culverts. Ten have a span of 20 feet or more; 11 are less than 20 feet. The town has a complete inventory of culverts (size, material, condition and location of each culvert).

The condition of local and state bridges is evaluated every two years by the Vermont Agency of Transportation. Using a system developed by the federal government, bridges are given a rating of between 0 and 100. The State, with input from the Region's Transportation Council, annually prioritizes projects.

Development of New Roads

New roads serving residential and commercial development must be planned and constructed in compliance with state regulations and town land use ordinances as well as the town's road standards. New roads may be incorporated into the town's highway system at the request of a developer or

property owners. Access, circulation and design review must be carried out according to town standards in order to protect the interests of the public and the town. The town should look in to conducting a Road Surface Management Survey. The results of the survey can be used to create a capital improvement plan.

Air

Rutland-Southern Vermont Regional Airport is located in North Clarendon. It is one of the largest state-owned airports in Vermont and the only state-owned airport with scheduled passenger service. There are also major commercial passenger and cargo services available at Burlington (VT) International Airport, Albany (NY) International Airport, and Manchester (NH) Airport.

A Federal Aviation Administration (FAA) aircraft beacon for the Rutland-Southern Vermont Regional Airport is located in the Town of Chittenden adjacent to Beebe Hill Road.

Bicycle and Pedestrian

Bicycle and pedestrian travel are critical elements in creating a balanced and sustainable transportation system. Health, safety and energy conservation are just a few of the benefits of these active means of transportation. Barstow School has participated in the Safe Routes to School Program, a program that encourages walking and biking to and from school, with an educational component to teach this life skill.

Currently there are no designated bike paths or bike lanes in Chittenden. However, in 2008, the Town of Chittenden received a \$20,000 Safe Routes to School grant to conduct a feasibility study for a combination bicycle and walking path along Chittenden Road between Power House Road and the Civil War monument.

Many people walk and bike on Chittenden Road. Ideally, all significant future development would

Community Survey 2015

Chittenden residents' vision for the next 15-20 years includes a strong desire see more pedestrian and bicycle – based transportation options in the town.

incorporate bike lanes connecting to existing transportation infrastructure. Pedestrian options in Chittenden are limited and there are currently no sidewalks in the town (except on the bridge over East Creek). Although highways dominate the local transportation network, other modes of transportation are increasingly important in providing access to the people of Chittenden.

Public Transportation

Public and private transit services are an important component of a transportation system. Not only does public transportation decrease the number of vehicles on highways, it provides an essential service to the elderly, and persons with disabilities.

Public transportation in Chittenden is limited, consisting of a non-routine para-transit public bus service provided by the Marble Valley Regional Transit District (MVRTD) also known as The Bus. This service is primarily for medical purposes and must be scheduled in advance. The Bus serves Rutland and provides service to several surrounding towns.

Future Transportation Needs

- There is an increasing awareness of the benefits of healthy lifestyle choices. As a result, more communities are recognizing that people want facilities for walking and bicycling.
- Fuel costs will likely continue to rise over time which may result in an increased demand for non-single occupancy vehicle travel.
- As the population of Rutland County continues to age, residents may choose to rely more heavily on transit providers for their needs.
- Regular commercial bus service to Rutland from Chittenden.

Impact of Regional Transportation

In order to increase local participation in transportation planning in Vermont, the Agency of Transportation (VTrans) supports the regional

Transportation Advisory Committees (TAC). The towns appoint the members of TACs and they work together to prioritize projects and issues for attention by VTrans. In Rutland County, the TAC is known as the Rutland Regional Transportation Council (RRTC). Chittenden supports the efforts of this committee and will participate through a designated representative.

Goals

- Improve traffic safety and traffic patterns.
- Promote a variety of modes of transportation by supporting infrastructure improvements.
- Consider on an ongoing basis the need for a cost-effective and well balanced transportation system.

Objectives

- Expansion of regional/town wide public transportation.
- Incorporation of bike paths/pedestrian paths into the town's roadways.
- Maintain and upgrade roads for safe automobile and shared use (pedestrian and bicycle).
- Maintain and improve the conditions on existing transportation infrastructure.
- Encourage cost-effective and efficient use of transportation.
- Ensure the provision of adequate funding and a satisfactory maintenance schedule for Chittenden's roads and bridges through effective management of state and local resources.
- Curb cuts should be kept to a minimum when planning for new growth.
- Improve potential for Emergency vehicle access to all structures/homes in town.
- Roads should not be constructed or extended into important resource areas when they would lead to the degradation of those resources.
- Ensure highway department's facilities meet VOSHA standards.

Tasks

1. All public roads should be evaluated on a continuing basis so as to comply with current Vermont State standards. A detailed listing of all work needed to bring these roads up to those codes should be generated and a comprehensive, multi-year capital plan for scheduling that work should be implemented.
2. Establish provisions for every private road, access road, and driveway to be of sufficient dimensions and have surfaces capable of accommodating any emergency service vehicle likely to be called to that location. Ensuring the safety of emergency service personnel is a prime consideration.
3. Formally notify home owners of the requirements needed by emergency vehicles to reach their homes (e.g. width of driveways needed) so that risk is clearly understood and accepted by home owners building in remote or difficult to reach locations.
4. Work with MVRTD to research options for public transportation for Chittenden residents.
5. Identify areas subject to water erosion and flooding adjacent to or near public rights-of-way, which should be inspected and maintained and/or improved regularly.
6. Implement a multi-use pathway along Chittenden Road using the preferred design presented in the Safe Routes to School shared-use pathway feasibility study of 2008.
7. Consider other provisions for bicycles and pedestrians on heavily travelled areas and areas within Chittenden's central hub (Barstow school and Town Hall area).
8. In the interest of public safety, recommend standard protocols for the removal of snow and ice from the town's roadways.
9. If private roads are to be taken over by the town, ensure they are built according to specified standards, the cost of which shall not be borne by taxpayers.
10. Identify and maintain current road and safety signs.
11. Investigate the continuation, maintenance, and expansion of Wildcat Road.
12. Pursue grant monies to achieve stated objectives and tasks.
13. Improve highway department's facilities to protect town investments and meet VOSHA standards.
14. Encourage the protection and restoration the historic stone culverts and bridges in the town.

Recreation

Chittenden prides itself on the extensive outdoor recreational opportunities available within its borders, and recreation is an important component of the lifestyle and livelihood of many Chittenden residents. Popular activities include hunting, fishing, trapping, hiking, snowshoeing, cross-country skiing, bicycling, snowmobiling, boating, horseback riding, and all-terrain vehicle (ATV) use. The town's expansive forestland, open areas, and surface water resources make it ideal for outdoor adventure. Recreationists should check with the established restrictions before pursuing activities on both private and public land.



Photo: RRPC Staff

While many recreational pursuits in Chittenden occur on public waterways and on private, state, and federal lands, several town-owned facilities are also available for general recreation use by the public. Barstow School offers ball fields, outdoor tennis and basketball courts, and a playground for use by residents of Chittenden and Mendon. In 2009, funds to purchase a 29-acre parcel abutting the Barstow School property were donated to the Chittenden Town School District, allowing the District to develop that area for outdoor educational and recreation purposes. Volunteers helped to build a public trail system and outdoor classroom area on the site.

In addition to general outdoor recreational opportunities, the town offers several organized recreational program for residents. For instance, the Chittenden Recreation Program provides residents access to programs at Barstow School. Scheduled activities currently include adult and teen basketball, adult and teen volleyball, aerobics, Zumba fitness classes, chess club, soccer, and community-wide softball. Other events have also been sponsored such as community-wide sledding parties, nighttime glow-stick soccer and gym days for school students during vacation.

The following is an inventory of recreation areas located in Chittenden:

1. Chittenden Reservoir

- Type: Man-made reservoir; hydroelectric power project
- Location: South central Chittenden – approximate surface area 721-acres
- Ownership: Green Mountain Power
- Present use: Day use. Limited public access to fishing, swimming, hunting and boating; power production

2. Lefferts Pond

- Type: Man-made impoundment
- Location: Southern end of Chittenden Reservoir – approximately 49 acres
- Ownership: U.S. Forest Service (Green Mountain National Forest)
- Present use: Day use. Fishing, boating (non-motorized craft only), hunting

3. Long Trail

Type: Hiking trail
Location: Ridgeline of Green Mountains
Ownership: Various; maintained by Green Mountain Club
Present use: Hiking and camping

The Long Trail is sometimes referred to as Vermont's footpath in the wilderness. Built by the Green Mountain Club between 1910 and 1930, the Long Trail is the oldest long-distance hiking trail in the United States. The Long Trail follows the ridge of the Green Mountains from the Massachusetts-Vermont line to the Canadian border, making its way north through the center of Chittenden. It was the inspiration for the Appalachian Trail, which coincides with it for one hundred miles in the southern third of the state, breaking off just south of Chittenden in Killington.

4. Dwight D. Eisenhower National Fish Hatchery

Type: Fish Hatchery
Location: West central Chittenden – site area 35 acres
Ownership: Federal (U.S. Fish and Wildlife Service)
Present use: Fish production, tourist attraction

5. Lead Mine Woodlot (a.k.a. Farr Lot)

Type: Forest
Location: Northwest corner of town – approximately 202 acres
Ownership: Town of Chittenden
Present use: Forest, watershed, timber, hunting and recreation

6. Michigan Brook Woodlot

Type: Forest
Location: Central Chittenden– approximately 115 acres
Ownership: Town of Chittenden
Present Use: Forest, watershed, timber, hunting and recreation

7. Rutland Grammar School Woodlot

Type: Forest
Location: Adjacent to, and west of, Michigan Brook Woodlot – approximately 138 acres
Ownership: Town of Chittenden
Present Use: Forest, timber, recreation

8. Mount Carmel Woodlot (a.k.a. GMP Lot)

Type: Forest
Location: Central Chittenden – approximately 110 acres
Ownership: Town of Chittenden
Present Use: Forest, watershed, timber, hunting and recreation

9. Frederic Duclos Barstow Memorial School

Type: K-8 school, public recreation area, fields, gym, meeting room, library, nature trails, cross-country skiing
Location: Southwestern Chittenden – 32 acres plus adjacent 29-acre outdoor classroom and trail system
Ownership: Town of Chittenden School District

Present Use: Public recreation areas including cross-country ski trails, ball fields, tennis courts, basketball courts, and trail system

10. Chittenden Brook Camping Area

Type: Public camping area
Location: Northeastern Chittenden, site area – 20 acres, within Green Mountain National Forest

Ownership: U.S. National Forest Service
Present use: Camping, hiking, fishing

11. Mount Carmel State Forest

Type: Forest
Location: Central Chittenden – approximately 263 acres
Ownership: State of Vermont
Present use: Forest, watershed, hunting and recreation

12. Proctor Village Forest

Type: Forest
Location: Headwaters of Kiln Brook – 1,639 acres calculated
Ownership: Town of Proctor
Present use: Watershed, forest, and recreation by permission from Proctor

13. Pittsford Town Forest

Type: Forest
Location: Northwest Chittenden, near Nickwacket Mountain – approximately 265 acres
Ownership: Town of Pittsford
Present use: Watershed, forest, and timber

14. Green Mountain National Forest

Type: Forest
Location: Eastern border of town – approximately 29,465 acres
Ownership: Federal
Present use: Timber, watershed and recreation

The Green Mountain National Forest (GMNF) covers much of the eastern half of Chittenden, totaling 29,465 acres (acres calculated) within the town’s border. The GMNF is managed for a variety of uses, including recreation. It provides dispersed recreation (recreation not occurring on a developed recreation site) due to its large, contiguous land base. The United States Department of Agriculture, through the Forest Service, manages the GMNF. Total acreage of the GMNF, statewide, is approximately 400,000 acres.

15. Vermont Association of Snow Travelers (VAST)

Type: Trails
Location: Throughout Chittenden
Ownership: Private, Town of Chittenden, State and U. S. Forest Service
Present use: Snowmobiling and other recreational uses where permitted

The Vermont Association of Snow Travelers (VAST) is responsible for the maintenance and grooming of an extensive snowmobile network across the state. One of the oldest snowmobiling organizations in the United States, VAST is a non-profit group that includes over 140 clubs statewide, with over 45,000 members

combined. Eighty percent of VAST's trail system is on private land and permitted by agreement with each landowner. Nearly every town in Rutland County has VAST-maintained snowmobile trails.

16. Mountain Top Inn and Resort

- Type: Resort
- Location: Near Chittenden Reservoir
- Ownership: Private; available to public
- Present use: Lodging, restaurant, cross-country skiing, horse back riding and other outdoor activities

17. Catamount Cross Country Sky Association

- Type: Trails
- Location: Throughout Chittenden
- Ownership: Private, Town of Chittenden, State and U. S. Forest Service
- Present use: Cross country skiing and other recreational uses where permitted

Potential Recreation Impacts

- Erosion caused by misuse or overuse of trails. Repeated wear on the same trails, especially during the spring, can create ruts and develop erosion patterns on steeper slopes. In general, Chittenden trails appear to be in good condition. If use of these trails increases in the future, steps may need to be taken to limit soil erosion and trail degradation.
- Trails can alter wildlife habitat and travel corridors.
- Aquatic nuisance species can be carried between bodies of water by boats and fishing gear and become invasive.
- Positive economic impact on local economy.

- Conserve prime recreational resources and protect their scenic qualities from unnecessary despoliation.
- Provide for the preservation of major features of the environment such as mountains, waterways and bodies of water, wildlife habitat and other natural resources.

Tasks:

- Establish a Recreation Commission.
- Develop a Recreation Plan for the Town of Chittenden.
- Provide residents with information about trail designs and maintenance techniques that prevent erosion.
- Provide information to boaters and anglers instructing them, as per state law, to clean their gear thoroughly between outings to prevent the spread of aquatic nuisance species.
- Consider developing footpath access to both the Barstow School and the new East Creek trail system from Holden Road as well as from Chittenden Road.

Goals

- Maintain and enhance recreational resources and opportunities in Chittenden.
- Promote public safety at all public recreation facilities.

Objectives

- Provide a variety of year-round recreational activities and opportunities for residents.
- Encourage commercial enterprises that provide or support recreational opportunities for Chittenden residents and visitors.

Cultural Resources

Thriving cultural environments are important components for the overall health of a town. They promote the area's unique characteristics, broaden understanding of issues and cultures around the world, and contribute to the economic vitality and overall quality of life. Planning for cultural resources involves promoting their viability and use, and allows for the values of these resources to be taken into account in light of current economic, social and cultural conditions.

Chittenden has many active organizations working to enhance the community with cultural events in town. These organizations promote fundraising, ancestral heritage, economic development, youth, social service and education.

Areas of Interest

Frederic Duclos Barstow Memorial School

This Kindergarten through 8th grade school serves the towns of Chittenden and Mendon and is the heart of many recreational and cultural activities throughout the year. A preschool is offered at Barstow as well.

Frederic Duclos Barstow Memorial School Library

The school library at Barstow is designed to support the course of instruction in a formal education program as required by the State Department of Education.

Chittenden Public Library

Local public libraries are in many ways focal points of the communities they serve. They help define the community and often, through their programming, provide far more than just materials for information, education and recreation.

The Chittenden Public Library, a facility with over 2,500 books for adults and 450 books for children, is housed within the Barstow School Library. In addition to books and periodicals, the public library provides several personal computers for public use.

The library is equipped with wireless Internet access for use with the library's computers or patrons' laptops. Photocopies can be made for a small fee. The annual budget for the library service is \$15,000, - provided by the Town of Chittenden. The Chittenden Public Library currently publishes a quarterly town newsletter, hosts a book discussion group, and brings several musical performances to town each year. The library is open to the public 16 hours per week – 12 of which are staffed by a paid employee and the remainder are staffed by a volunteer. The Vermont Department of Libraries requires that a certified public librarian be the one managing public libraries. The manager of the Chittenden Public Library has been working on obtaining this certification.

The Chittenden Public Library has limited ability to expand due to space constraints and a relatively small budget. For the library to expand, a new location and larger budget would likely be needed. A decision of this magnitude, if funded through public monies, would have to be discussed publicly and decided by a public vote. Ways to enhance and deliver library service in Chittenden should be carefully considered so as to best serve the community. At present, there is a joint effort by the town and the school to obtain additional resources for residents and to provide a well-rounded library program for all.

Other libraries are available in the region for use by Chittenden residents. The Rutland Free Library, in the City of Rutland, is a full-service library facility that has made its programs and services available to the residents of a number of towns in Rutland County on a contractual (annual fee) basis. Chittenden has researched this option in the past, and it was rejected by a vote of the electorate. Currently, Chittenden residents wishing to check out materials from the Rutland Free Library may purchase a library card there.

Green Mountain National Forest: This land is used for legally approved activities, educational purposes and forest management.

Honto's Cave: This area has local historical value as a site of 19th Century séances.

Boiling Spring: Several very large springs form the origin of a sizable brook and the water source for the Village of Proctor.

Dwight D. Eisenhower National Fish Hatchery: The hatchery is open to the public year round. The staff provide educational outreach programs for area schools.

Churches: (see *Private Facilities and Services* section)

Chittenden Historical Society: Located temporarily at the former town office at 337 Holden Road. Hosts cultural and educational events. Promotes preservation of the towns' historical articles, buildings, and cemeteries.

Grange Hall: The Grange Hall, built in 1833, has served several purposes over the years. The building was originally built as a church. When the church discontinued use of the building around 1873, the

Society of Grangers began using it. In 1906 the Grange Hall and land were deeded to the Town of Chittenden and



subsequently used as when it was closed due to vandalism. (Source: Wheeler, Fran, and Karen Webster. *Chittenden, Vermont: A Town History*. Rutland, Vermont: Chittenden Historical Society, 2008.) Current efforts to renovate the Grange Hall for community use are well underway, with the lower level restoration being completed in 2009. The building now serves as a public multi-purpose event space and has been used for anniversaries, weddings, and community forums.

Cemeteries: Cemeteries provide an important record of town history (see *Private Facilities and Services* section).

Civil War Monument: Dedicated September 12, 1912 to honor the Civil War soldiers of Chittenden, Vermont.

Goal

- Contribute to the quality of life in Chittenden by providing and protecting a variety of cultural resources and opportunities.

Objectives

- Maintain the quality and frequency of cultural events and activities available in town.
- Encourage community projects, art and cultural events, festivals and cultural tourism.
- Encourage cultural resource groups to collaborate with the town and other interested parties.

Tasks

- Promote cultural activities through posting flyers and calendars of events in town-owned buildings and on the website, as well as assisting in other promotional activities.
- Utilize public facilities and space as venues for artists, historical exhibitions and cultural events.
- Support the Chittenden Public Library and organizations which provide cultural opportunities in Chittenden.
- Complete the Grange Hall improvements so that it can be fully utilized.
- Work towards the refurbishment and upgrading of other public buildings and properties.
- Plan for integrating facility upgrades into a future capital improvement plan.

Housing

A sufficient supply of quality housing is necessary for any community that expects to have a strong economy and a stable workforce. Vermont is considered one of the least affordable states in the nation; two and three bedroom apartments are not affordable to many Vermont renters. Homeownership in Vermont is also difficult for many credit-worthy households due to the high up-front costs of purchasing a home and the increase in median home sales prices in recent years. Nationwide, a trend toward fewer persons per household has changed the type of housing needs and increased the demand for housing, especially affordable housing, in many towns.

Existing Conditions

Chittenden has an existing settlement pattern typical of New England towns. Homes, and utilities built to support them, are the basis for the majority of all development in town. Most of the higher density residential development and public buildings initially started in and near the historic cores of North and South Chittenden. New development, however, has been taking place away from the town centers, in widely dispersed, single-family dwellings along the major roads in town. There have been several subdivisions built in North Chittenden within the last 15 years, including Lazy Acres, Smith Farm, Upland Drive, Pasquale Street and German Hill Farm.

four unit structures and 26 mobile homes. One hundred twenty of these housing units (21%) were built prior to 1939. The number of housing units in Chittenden has increased steadily each decade since 1940. Two hundred forty seven units (43%) were built between 1970 and 1990 and eighty-nine units (15%) were built between 1990 and March of 2000. In 2010, 87% of occupied housing units were owner occupied. This is higher than both the County (70%) and State of Vermont (71%) averages. The 2010 87% owner occupied figure is up from the 2000 level of 82%.

Seasonal or vacation housing units make up 17% of the total housing units. This is roughly in line with the Rutland County (17%) and State of Vermont averages (16%) (Source: US Census 2010). This figure has been relatively constant for the last four decades and is correlated to the high median income of town residents. It also suggests that Chittenden, with its quiet small town charm and proximity to significant summer and winter recreation areas, is appealing to those who can afford second homes.

The Chittenden population is composed predominantly of family households. According to the 2010 Census, families made up 74% of the total households. This is higher than the County (62%) and State averages (63%). As can be expected with an aging population, the average household size dropped from 2.62 in 2000 to 2.52 in 2010. The figures are still well above the Rutland County (2.28) and State of Vermont average (2.34).

Housing Market

The issuance of building permits for new construction is one indicator of trends in an area's housing market. See Table, below. The recent downward trend in new home construction (see Figure 14, below) coincides with the overall downturn in the housing market.

Community Survey 2015: Housing

When asked what types of housing development they would like in town, respondents indicated these as **most desirable**:

1. Permanent Year Round
2. Senior Housing
3. Seasonal Vacation

These types of housing were found to be **least acceptable**:

1. Housing Developments
2. Cluster Housing
3. Apartments/Condominiums
4. Mobile Homes
5. Multi-Family

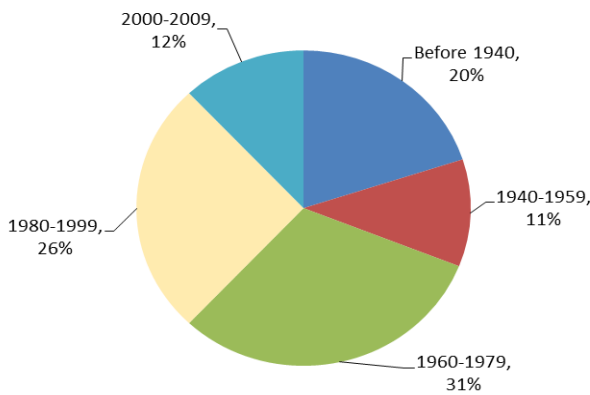
At the time of the 2010 US Census, there were 645 total housing units in town; 536 were single-family detached structures, 10 duplexes, 7 three or

Figure 14. Single-family New Home Construction Building Permits Chittenden, Vermont

Year	# Permits
2001	9
2002	10
2003	9
2004	9
2005	17
2006	15
2007	5
2008	4
2009	3
2010	2
2011	0
2012	2
2013	1
2014	2

Source: Chittenden Town Office Records, April 2015

Figure 15. Age Distribution of Houses in Chittenden, Vermont.



Source: US Census, 2010

The median home values in Chittenden continue to exceed those for the state and Rutland County, and the gap is growing significantly (See Figure 6, page 15). Between 2009 and 2013, the estimated median home value in Chittenden was \$225,000 (Source: 2009-2013 American Community Survey 5-Year Estimates). This figure is up approximately 75% from 2000 and corresponds to the significant increase in median household income since 2000 (See Figure 8, page 16).

In 2013, the average price of primary residences sold in Chittenden was \$245,754, which is in line with an upward yet fluctuating trend in prices over the last few decades. (See Figure 7, page 16) Between 2004 and 2007, an average of 17 homes sold per year,

reaching a high of 21 in 2006. The number of sales declined sharply, however, to only 8 units sold in 2008. From 2010 through 2014 an average of 11 homes sold annually.

Housing Affordability

The generally accepted standard for housing affordability defines housing as “affordable” if the household is paying no more than 30% percent of its income for rent and utilities or for mortgage, taxes and insurance. This standard may be too high when considering the rising costs of other necessities, such as health care, fuel, and child care, but it remains the basis for defining “affordable housing.”

Affordability is determined by two factors. The first is the cost of housing, and the second is the ability of people to pay that cost. As home prices and rents rise at a faster rate than wages, housing becomes less affordable for an increasing number of people. The average fair market rent for a modest two-bedroom apartment in Rutland County in 2015 was \$904 (VT Housing Data/Department of Housing and Urban Development). In order to afford this, the household would have to earn \$17.38 per hour (roughly \$36,000 per year) or 190% of the state minimum wage of \$9.15 (VT Housing Data).

According to the 2007-2011 American Community Survey 5-Year Estimates, the percentage of renters paying more than 30% on rent in Chittenden is 44%. This is well below the State of Vermont average of 52%. The percent of homeowners (with and without a mortgage) paying more than 30% on housing is 26%; lower than the State of Vermont average of 33%.

While the percentage of households paying more than 30% of their income on housing is much lower than the County and State averages, according to the Rutland County Housing Needs Assessment (2005), the town of Chittenden is become increasingly unaffordable. In 1990, the affordability index, which measures the affordability of the town compared to the state average, was 65.3%. In 2000, the index climbed to 96.6%, indicating housing was less affordable than in 1990.

The special needs population for the purposes of a housing analysis includes single parent households, elderly and the homeless, and the physically and mentally impaired. In addition to requiring certain services that differ from typical single-family households (i.e. physical accessibility, assisted living) these groups also tend to be in the lower income category. In Chittenden, persons over 65 made up 23% of residents in renter occupied units and 22% of those in owner-occupied units, however, they only comprise 13% of the population. This suggests that there are many homes being led by persons on moderate or fixed incomes. Single householders with children made up 5% of the population (Source: US Census 2010). There is no reliable data on the number of homeless persons in Chittenden.

Future Housing Trends

According to the Rutland Regional Plan (2014), “Changes in the Region’s population structure and an ongoing need for additional housing units will continue to shape housing needs into the future.” Following are among the key trends outlined in the Rutland Regional Plan:

- Senior populations are expected to increase, and with it demand for senior housing. Vermont’s median age will climb to 44 by 2030. There will be an increased need for assisted living facilities, accessible apartments and housing that can be served by non-automobile modes of transportation.
- Household sizes have declined steadily over the past 30 years and are expected to do so into the future. The number of 1 and 2 person households will rise, making for a glut of larger homes and a need for smaller units.
- Seasonal populations are likely to continue to grow, especially in areas near Killington and Okemo resorts. These influxes will add additional competition for homes and house sites and may inflate purchase and rental costs in certain communities.
- New construction in all towns will place additional burdens upon municipal services and continue to challenge town officials with how and where to accommodate housing.
- The availability of empty lots, both within

existing urban and village centers and on their outskirts, is limited throughout Rutland County.

Housing Challenges

Any future housing development in Chittenden is restricted by topography and the lack of public water and sewer systems. In general, it is hard to serve multiple units with on-site water and wastewater systems due to topography and separation issues associated with larger systems. Also, it is difficult for nonprofit developers to acquire funding for developments not connected to municipal water and sewer systems.

Transportation costs are a hidden cost of housing. For example, people who live within walking distance of services, stores and places of employment can substantially reduce their transportation costs by owning only one car, or none, instead of several. Having access to an automobile is important in Chittenden due to limited public transportation and the fact that services, stores and places of employment are not within easy walking distance for most residents. Therefore, people choosing to minimize their reliance on automobiles or wishing to reduce their driving expenses are more likely to choose to live in towns where they can find housing closer to services.

Finally, the low demand for affordable units within town will most likely prevent any low-income housing developer from choosing to site an affordable rental development in Chittenden. The small resident population and below average amount of renters paying more than 30% of income on housing costs suggests that only a small development (1-5) units will be supported by the population. Rarely will developers undertake developments of less than 15 units in rural areas due to economic feasibility.

The Town of Chittenden can encourage the provision of affordable rental units by facilitating the use of accessory apartments, which are encouraged by the State of Vermont (VSA Title 24, Chapter 117, Section 4412)

Goals

- Encourage a variety of safe housing options that meets the current and future needs of the citizens of Chittenden and is in keeping with the town's small-town flavor.
- Minimize the negative impact and maximize the positive impact of new housing development on the town's natural resources, municipal services, and local tax burden.
- Preserve historic structures in ways that appropriately serve the need for housing that is balanced with energy efficiency improvements.
- Promote a diversity of housing types and choice between rental and ownership in a variety of locations suitable for residential development and convenient to amenities.

Objectives

- Support the level and type of new housing development acceptable to Chittenden residents, including those found to be most desirable through the 2015 community survey: permanent year round, senior housing, and seasonal/vacation.
- Promote energy efficiency in new construction and historically suitable rehabilitation of existing facilities and homes.
- Encourage appropriate pedestrian friendly development (sidewalks and bike paths) with any new significant residential development.
- Ensure that new and rehabilitated housing is constructed to meet safety and sanitary minimum standards.

Tasks

1. Invite public input regarding type and level of development through meetings and surveys.
2. Identify possible location(s) of senior/assisted living facilities within Chittenden.
3. Collaborate with developers, builders, private lenders, and government agencies in identifying options for senior housing in Chittenden.
4. Provide information to residents about

improving energy efficiency in their homes and ways to help finance the improvements. Provide information on the savings to be found through energy efficient housing.

5. Research options for developing shared use pathways in residential areas of town.
6. Explore the need for a set of residential building codes that can be recommended to the Selectboard in order to protect the health and safety of residents.

Energy

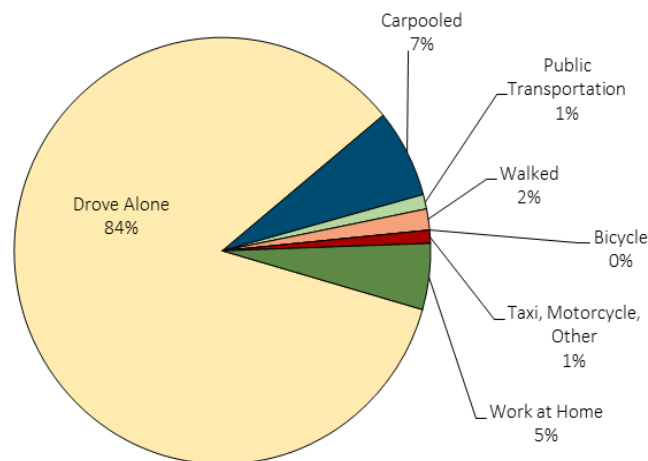
Energy use in the town of Chittenden parallels patterns throughout other rural communities. Transportation and home heating are the two primary draws on fuel and energy. While energy use in Chittenden is low due to the sparse population and lack of industry, and Vermont has the sixth lowest per-capita energy use in the country, rising energy costs and the environmental impacts of energy production have made energy an important issue and a planning priority. (Source: U.S. Energy Information Administration)

Energy Use: Transportation

Transportation is a significant consumer of energy in the Rutland Region and Vermont as a whole. According to the U.S. Energy Information Administration, the transportation sector in Vermont accounted for 37.9% of all energy consumed in 2012. It is no surprise that energy use for transportation is high in Chittenden. Due to the town's rural nature and lack of industry and jobs, 94.2% of employed Chittenden residents work outside of the town (Source: US Census OnTheMap, 2011) and commute an average of approximately 29 minutes (Source: 2009-2013 American Community Survey 5-Year Estimates).

At this point there are few viable alternatives to driving to work. Carpooling is taking place but no formal town program is in place. The town has one Park and Ride lot, which is located at the North Chittenden Grange Hall and can be utilized for free to support carpooling. There are no public transportation systems operating in Chittenden, however Marble Valley Regional Transit District does operate The Bus in other parts of Rutland County. Cutting costs for transportation will require the use of more efficient vehicles, reducing trips out of town, encouraging pedestrian friendly development, and developing public transportation options.

Figure 16. Modes of Transportation for Chittenden Commuters



Source: 2009-2013 American Community Survey 5-Year Estimates

Energy Use: Residential Heating

Heating and other related household activities accounted for 29.2% of all energy use in the state in 2012 (U.S. Energy Information Administration). Home energy use in Chittenden is a combination of heating oil (46%), propane (16%), wood (31%), electricity (1%) and most recently wood pellets. Renewable energy sources are used by a number of residential houses in town. No town-wide energy efficiency programs have been established in Chittenden.

Energy Use: Electricity

According to the U.S. Energy Information Administration, approximately 41% of the energy consumed in Vermont comes from electricity. In 2011, Chittenden households consumed an average of 7,509 kilowatt hours (kWh) of electricity. This is higher than the 6,848 kWh average for household consumption across all Vermont municipalities (Source: Efficiency Vermont).

In Chittenden, Green Mountain Power (GMP)—formerly Central Vermont Public Service—services electric customers through its Rutland office. In 2014, GMP's power was purchased mainly through contracts with Hydro-Quebec (34%), market purchases (26%), various renewable energy sources (18%) such as wind and

woodchip power, and Vermont Yankee Nuclear Power Station (13%). A small amount of power was also derived from Vermont hydropower (8%) and oil (1%) (Source: Green Mountain Power). Energy sources will continue to shift due to the closure of Vermont Yankee in 2014, advances in natural gas delivery, and encouragement of renewable energy generation such as solar power.

The *Rutland Regional Plan* predicts that energy use is likely to increase throughout the region at a slow pace, with high demand during the summer months.

The Town of Chittenden has within its borders a 3.3 mw hydroelectric project and the Chittenden Reservoir owned and operated by GMP. The East Pittsford Power Station on Power House Road generates approximately 8,000,000 kwhs of electrical energy annually. This compares to the annual electric consumption of the town's residents and businesses of approximately 6,000,000 kwhs. The power generation and distribution systems in Chittenden also provide a major tax base (4%) for the town.

Running in the north/south direction in the southern part of town is the GMP 46kv transmission line that connects the East Pittsford power Station, on Power House Road to the electric grid that runs from Rutland to the Middlebury Area. Distribution substations located in Mendon and Pittsford are connected to the same Rutland to Middlebury power grid supplying the distribution power to the 12.5kv lines in the town of Chittenden. During power disturbances or emergencies the Town of Chittenden can receive its power supply from Rutland or the Middlebury area.

The Town of Chittenden has average reliability indices compared to other rural towns. The majority of the power outages are tree related outages during wind, snow and ice storms. Power quality in the town is excellent.

Regional Energy Trends

The *Rutland Regional Plan (2015)* identifies several trends in energy use over the coming years:

- Electrical energy consumption is likely to continue to increase in the commercial and

industrial sectors. Peaks in demand will likely become a significant concern for providers and consumers, as large-scale storage of electricity is not an option.

- Natural gas could be a new fuel choice since it is a lower cost and less carbon intensive source of energy compared to petroleum-based sources, however there are still environmental concerns.
- Worldwide energy supplies are likely to continue to be unstable. Increasing global demand and limited supplies will continue to cause prices for oil products to fluctuate.
- In 2011, Vermont had the lowest carbon dioxide emissions from electricity generation among the 50 states: 0.1%. However transportation and heating fuel use account for 71% of emissions, a rate far higher than the national average for these sectors.
- Vermont has established goals of providing 20% of the state's electricity needs with renewable energy sources by 2017, and 90% of energy needs across all sectors from renewable resources by 2050. This will impact the size and type of renewable energy facilities developed in the region.

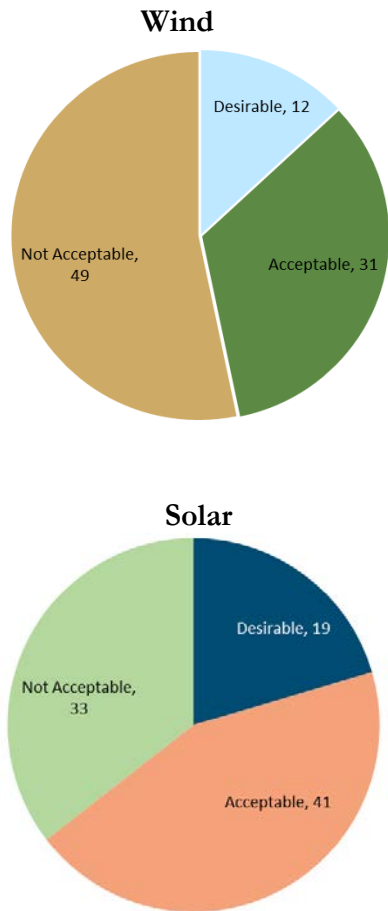
Alternative Energy Sources and Conservation Measures

As noted in the *Rutland Regional Plan*, nearly one-quarter of all energy consumed in Vermont and in the Rutland Region comes from renewable sources, including but not limited to wind, solar, hydroelectric, and bioenergy. Vermont is promoting the development of renewable energy sources to address climate change and reduce reliance on fossil fuels, and increase energy options available locally. However, new energy generation also must avoid undue adverse impacts on local communities and the environment. The state has established a set of ambitious goals to increase the use of renewable energy for both heating and electricity. By 2017, 20% of electricity consumed in the state is to come from renewables which includes generators that began operating after 2004. By 2032, the state goal is to have 75% of all electricity coming from renewable sources. The goal for 2050 is 90% of energy needs across all sectors. (Source: VT Public Service Department, EIA 2014).

Alternative energy sources are being utilized in schools and farms, as well as in individual homes around the state and the region. Chittenden is home to a wind and solar engineering firm. Several homes in Chittenden get part of their domestic energy from solar and wind. Between 2014 and 2016 Barstow Elementary School’s lighting is getting upgraded to energy efficient, LED lighting.

The results of the 2015 Chittenden Community Survey show that Chittenden residents have mixed feelings about the desirability of large-scale wind and solar power generation in town, as shown below.

Figure 17. Survey Results Regarding Commercial/Industrial Renewable Power Generation



Although municipalities have little control over the fluctuations in the global energy market, there are many steps they can take at a local level to help their citizens and government offices function cost-effectively and with the smallest possible impact on the environment:

Efficient building design – Encourage the use of low-flow toilets and shower heads; energy efficient appliances and lighting; using local materials during construction; passive heating and cooling through building orientation; proper fenestration (the arrangement of windows in a building) and landscaping; solar hot water; super insulation and renewable heating sources such as geothermal heat pumps.

Development Patterns – Land use patterns are a significant factor in determining energy demand, and transportation is a leading source of energy use in the region and state. Compact development and mixed use village/town center development helps reduce demand for transportation by locating many goods and services in the same place and facilitates pedestrian and bicycle modes of travel. Supporting compact development surrounded by more rural open areas also maintains the traditional land use pattern that residents and visitors associate with the history and character of the region.

Permitting/Siting Considerations

Energy generation in Vermont is subject to a number of different permitting requirements, most of which are limited to state level permitting. State statute protects residential renewable energy generation systems from regulations that will completely prohibit their development.

Section 248

Distributed power generation facilities, such as hydropower dams, fossil fuel plants, and wind power or solar systems owned by utilities, are subject to review and approval by the Vermont Public Service Board (30 VSA §248). Under this law, prior to the construction of a generation facility, the Board must issue a Certificate of Public Good. A Section 248 review addresses environmental, economic, and social impacts associated with a particular project, similar to Act 250. In making its determination, the Board must give due consideration to the recommendations of municipal and regional planning commissions and their respective plans. Accordingly, it is appropriate that this Town Plan address these land uses and provide

guidance to town officials, regulators, and utilities.

For all commercial energy generation facilities, the following policies shall be considered:

1. Preferred Locations: New generation and transmission facilities shall be sited in locations that reinforce Chittenden's traditional patterns of growth, of compact village center surrounded by a rural countryside, including farm and forest land.

2. Prohibited Locations: Because of their distinctive natural, historic or scenic value, energy facility development shall be excluded from the following areas:

- Floodways shown on FEMA Flood Insurance Rate Maps;
- Fluvial erosion hazard areas shown on Fluvial Erosion Hazard Area maps;
- Wetlands as indicated on Vermont State Wetlands Inventory maps or identified through site analysis; and
- Rare, threatened or endangered species habitat or communities.
- The Town Forest

3. Significant Areas: All new generation, transmission, and distribution facilities shall be sited and designed to avoid or, if no other reasonable alternative exists, to otherwise minimize and mitigate adverse impacts to the following:

- Historic districts, landmarks, sites and structures listed, or eligible for listing, on state or national registers.
- Primary agricultural soils mapped by the U.S. Natural Resources Conservation Service.
- Public parks and recreation areas, including state and municipal parks, forests and trail networks.
- Municipally designated scenic roads and viewsheds.
- Special flood hazard areas identified by National Flood Insurance Program maps.

- Public and private drinking water supplies, including mapped source protection areas.
- Necessary wildlife habitat identified by the state or through analysis, including core habitat areas, migration and travel corridors.

4. Natural Resource Protection: New generation and transmission facilities must be sited to avoid the fragmentation of, and undue adverse impacts to, the town's working landscape, including large tracts of undeveloped forestland and core forest habitat areas, open farm land, and primary agricultural soils mapped by the U.S. Natural Resource Conservation Service.

5. Protection of Wildlife: Designers must gather information about natural and wildlife habitats that exist in the project area and take measures to avoid any undue adverse impact on the resource. Consideration shall be given to the effects of the project on: natural communities, wildlife residing in the area and their migratory routes; the impacts of human activities at or near habitat areas; and any loss of vegetative cover or food sources for critical habitats.

6. Site Selection: Site selection should not be limited to generation facilities alone; other elements of the facility need to be considered as well. These include access roads, site clearing, onsite power lines, substations, lighting, and off-site power lines. Development of these elements shall be done in such a way as to minimize any negative impacts. Site clearing and roadways can have greater visual impacts than the energy generation facility itself. In planning for facilities, designers should take steps to mitigate the project's impact on natural, scenic and historic resources and improve its harmony with the surroundings.

Goal

- Promote efficient use of energy in a manner consistent with this town plan.

Objectives

- Improve energy efficiency of town operations as well as public, commercial and residential buildings.
- Promote energy efficient methods of land use and transportation.
- Maintain and/or expand energy infrastructure that: 1. satisfies the current demand 2. accommodates additional growth and 3. is consistent with this town plan.

Tasks

1. Provide citizens with information on how the placement of buildings can reduce energy costs. For example, solar orientation, natural windbreaks, and location near village centers.
2. Conduct energy audits and make public buildings models of energy efficiency.
3. Work with energy efficiency consultants/organizations to encourage the use of energy efficient appliances and construction methods, provide citizens with information on how the placement of buildings can reduce energy costs, and to promote weatherization programs.
4. Encourage, through the development of Park and Ride lots, a regular carpool opportunity for Chittenden residents.
5. Encourage small-scale, residential renewable energy generation.

Flood Resilience

Introduction

Flood events are Vermont's most frequent and costly type of natural disaster. There are two types of flooding that impact communities in Vermont: inundation and flash flooding. Inundation is when water rises onto low lying land. Flash flooding is a sudden, violent flood which often entails fluvial erosion (stream bank erosion). The combination of flash flooding and fluvial erosion cause the most flood-related damage in the state. According to the Vermont Division of Emergency Management and Homeland Security, the state incurred costs of more than \$850 million from Tropical Storm Irene in August of 2011. Prior to and since Irene, Vermont has experienced more frequent and severe flooding and will likely continue to in the future.

Mapping Flood Hazard Areas

To meet the new state requirement of identifying flood hazard and fluvial erosion areas and designating areas to be protected, maps are an essential aid. Because the methods of mapping inundation and fluvial erosion corridors differ significantly, river corridor maps are a critical addition to existing flood hazard maps. The National Flood Insurance Program (NFIP) was created by the Federal Emergency Management Agency to address inundation hazards. Flood insurance rates are based on Flood Insurance Rate Maps (FIRMs) or Digital Flood insurance Rate Maps (DFIRMs) which delineate areas of the floodplain likely to be inundated during a flood. These are identified as a Special Flood Hazard Area (SFHA) or with a 1% annual chance of flooding. Town participation in NFIP is voluntary. In Vermont, two thirds of flood damages occur outside of federally mapped flood areas.

Chittenden has 18 structures in the Special Flood Hazard Area (SFHA). Just 3 of those structures located in the SFHA are insured for flooding.

Vermont's River Corridor and Floodplain Management Program, developed by the Vermont Agency of Natural Resources (ANR), delineates

areas subject to fluvial erosion. River corridor maps are designed with the recognition that rivers are not static. Development in the river corridor and stream channel engineering over time have increased channel instability. While these management practices may create the illusion of stability, these engineered channels when tested by a high flow cannot be maintained. Special mapping and geomorphic assessments can identify fluvial erosion hazard areas along rivers.

Stream Geomorphic Assessment (SGA) has been done on various water bodies that run through Chittenden. Phase 1 and 2 SGA was completed on the Upper Otter Creek in 2005 and 2009, respectively. Phase 1 SGA has also been done on the Otter Creek Watershed Tributaries, completed in 2009. Additionally, a River Corridor Plan was created for the Upper White River in 2007.

These studies and plans are vital in determining river and stream alterations, which affect water flows and could potentially lead to future flood damage. The SGAs and River Corridor Plans suggest potential remediation actions that can be taken to reduce the risk of future flood damage including, planting stream buffers, stabilizing stream banks, removing berms, removing structures and restoring incision areas. Unmapped River Corridors/Fluvial Erosion Hazard (FEH) Areas of Chittenden should be included in this Municipal Plan as they become available.

History of Flooding

A number of significant flooding events have occurred in Chittenden in the last fifteen years alone, as indicated in the flood history table below. County-wide FEMA Disaster Declarations (DR-#) are included where applicable.

August 9, 2013: Flooding of Otter Creek, which reached 4.33 feet, caused damage to Mountain Top, River, and Wildcat Roads.

August 31, 2011: Tropical Storm Irene caused intense flooding and \$189,778 in damages to Wildcat, River, and Dugway Roads (DR 4022).

April 14-15, 2002: Flooding caused \$69,596 in damages to Mountain Spring, Casey, Wildcat, and Dam Roads.

December 17, 2000: Up to 3 inches of rain falling on a frozen ground caused flash flooding and \$29,187 in damages (DR 1358).

July 31, 2000: Heavy rain caused flash flooding and \$6,052 in damages to roads (DR 1336).

September 16-21, 1999: Tropical Storm Floyd brought heavy rain and wind. The town received \$3,933 from FEMA for damages (DR 1307).

Flood Hazard Area Regulations

Chittenden adopted its most recent Bylaw Flood Hazard Area Regulations on August 22, 2011. These regulations comply with state law and allow the town to meet the requirements of the NFIP. River Corridors have not been incorporated into the town's flood hazard regulations. Chittenden's flood hazard regulations could exacerbate flooding and fluvial erosion by allowing new development and fill in Special Flood Hazard Areas.

The current flood hazard regulations, since they do not include river corridor protection, do not qualify the Town for favorable (17.5%) state reimbursement rates after disasters as established in the Emergency Relief and Assistance Fund (ERAF) rule.

Local Hazard Mitigation Plan and Local Emergency Operations Plan

The Chittenden Local Hazard Mitigation Plan (LHMP) was adopted in 2004 as an Annex to the Rutland Region All-Hazards Mitigation Plan, however the plan has since expired. Since June of 2013 the Town has been working to update the LHMP to a single jurisdictional plan, and the LHMP is currently under FEMA review. Chittenden maintains an up-to-date Local Emergency Operations Plan (LEOP), which was last adopted on April 13, 2015. The LEOP encourages flood preparedness and identifies a process for response planning, and must be updated annually by May 1.

NFIP Participation

The town's Flood Insurance Rate Map and Flood Insurance Study were first published in September of 1985. The Rutland County DFIRM became effective in August 2008; hydrology and hydraulics were updated in the DFIRM. Chittenden joined the National Flood Insurance Program in 1985.

Lands that Minimize Flooding

There are natural features which protect against flood damage. These should be protected at all costs. Riparian buffers, for example, reduce flood hazards and stabilize stream banks, attenuate floods, provide aquatic and terrestrial habitat and wildlife corridors, filter runoff, absorb nutrients and pollutants, and shade streams to keep them cool. Wetlands, by acting as a natural "sponge," also prevent flood damage and are a vital component for maintaining the ecological integrity of land and water. In addition, upland forests also moderate flood impacts and attenuate flood impacts by mitigating the effect of steep slopes and gravity, which amplifying water velocity in rivers and streams. Water shed and River Corridor assessments aid communities in making knowledgeable and strategic decisions about how to best protect, manage, and restore natural watershed resources.

Goals

- The citizens, property and economy, and the quality of the town's natural resources are protected by using sound planning practices to address flood risks.
- The Town of Chittenden is able to recover from flooding quickly and in a manner that improves flood resilience for the future.
- Development in the town occurs in a manner that does not worsen flooding, and natural river functions are restored.

Objectives

- Protect river corridors and restore natural river functions.
- Reduce flooding vulnerabilities by flood-proofing or removing structures in flood areas, discouraging construction in flood hazard areas, and reducing impervious surfaces.
- Work with Green Mountain Power to reduce the risk of flooding from the dam, and improve warning systems and response.
- Continue hazard mitigation planning, emergency operations planning, and public education.

Tasks

1. Explore updating the town's flood hazard area regulations to protect river corridors and meet standards in the current Vermont flood hazard area regulation model #6, as mapping and stream geomorphic assessment becomes available.
2. Work with RRPC, ANR, and landowners to pursue lessening flood risk by reconnecting river channels to historic floodplains, such as through intentional lowering of stream banks and/or raising river channels.
3. Work to develop more consistent, accurate and thorough identification of wetlands areas through the use of

best available data, as funding is available.

4. Support the Chittenden Emergency Management Committee to pursue flood hazard mitigation efforts and continue to improve emergency response capacity.
5. Encourage homeowners to purchase flood insurance, especially for those not in mapped Special Flood Hazard Areas.
6. Work closely with GMP regarding controlled water release, emergency action planning, and warning sirens.

Natural and Historic Resources

Vermont Statutes Annotated Title 24, Chapter 117, Section 4382 contains twelve specific content goals that enumerate and generally describe the objectives that must be accommodated in a municipal plan. Number five requires that “A statement of policies on the preservation of rare and irreplaceable natural areas, scenic and historic features and resources” be provided in the municipal plan. Of primary importance in this regard are the identification, protection and preservation of important natural and historic features. This includes: significant natural and/or ecologically fragile areas; outstanding water resources, including lakes, rivers, aquifers, shore lands and wetlands; scenic roads, waterways and views; important historic structures, sites or districts; and any areas of archeological significance.

Natural Resources

Physiography: Topography, Geology, and Soils

Chittenden is located in the northeastern part of Rutland County. Its physical borders encompass 74.0 square miles, or 47,386 acres, making it the largest town in the State of Vermont. Approximately 63% of the land area in Chittenden is conserved, mostly through the Green Mountain National Forest (approximately 29,465 acres), other state and municipal forests (approximately 565 acres), and the Vermont Land Trust (approximately 220 acres).

The Town of Chittenden is a rugged, mountainous area, with elevations ranging from 900 feet in the western parts of the town to well over 3,000 feet throughout the rest of the municipality. Six mountains within Chittenden’s borders reach elevations of 3,000 feet or more. Farr Peak is the tallest peak at 3,522 feet. The Long Trail, a 100-year old hiking trail, runs directly through the center of town along the spine of the Green Mountains and is considered by many to be a valuable resource for the state and community.

The town falls primarily in the *Southern Green Mountains* physiographic region, but a small section

of the town, along the western border, is located in the *Vermont Valley* region. Precambrian rocks predominate the *Southern Green Mountains* physiographic region and the Town of Chittenden. A narrow band of Cheshire Quartzite occurs along the western boundary of the range. Deep glacial till blankets most of the region, except for the highest elevations and steepest topography where there is exposed bedrock. Outwash deposits and glaciofluvial kame deposits are common in the river valleys.

In the western-most parts of the town, located in the *Vermont Valley* physiographic region, the bedrock is mostly from the Ordovician period. The valley floor is comprised of calcareous rocks (limestone and marble), deposited as marine shells and fragments in a shallow sea that once covered the area.

Soils are a basic component of natural life cycles and processes.

They retain and distribute water, provide nutrients and minerals, and sustain plant and animal habitats. Deep and well drained soils are common throughout much of the valley.

In addition to the scenic and recreational value of the Green Mountains, these areas provide a constant supply of fresh surface and groundwater. Because soils are usually shallow at the higher elevations, the amount of surface runoff is high and restoration of vegetative cover is slow. The environment in areas above 1,500 feet is very sensitive. Above 2,500 feet, it is considered extremely fragile. Slopes greater than 15% are found throughout the town. Development in these areas usually results in erosion and stream siltation and can contribute to groundwater degradation because the potential for septic system failure and subsequent pollution is much greater. Development that can disturb fragile natural resources through removal of soil and vegetative cover on these slopes is incompatible with sensitive water-bearing qualities of the area.

<p>Community Survey 2015: What is Chittenden’s greatest asset? The most common responses included the rural landscape and natural beauty of the town, Chittenden Reservoir, and Green Mountain National Forest.</p>

Soil potentials and limitations can be interpreted by soils specialists in determining suitability for subdivisions, farming, growing trees, domestic septic systems, and building sites.

Water Resources: Surface Waters

Surface water resources, which include lakes, ponds, rivers, streams and wetlands provide many important benefits. For example, surface waters support economic activities such as agriculture, residential activities such as drinking and cleaning, and recreational activities such as swimming and boating. They also serve as habitat for wildlife and as an important component of the hydrologic cycle.

Topography, geologic, and climatological factors greatly influence the hydrologic events of watersheds and drainage basins. A watershed is a specific area of land that drains water, sediment and dissolved materials into a river system or other body of water. A drainage basin is a watershed that collects and discharges surface stream flow through one outlet. All land uses that occur in the watershed can affect water quality.

Surface water drains in two key directions in Chittenden; westward, into the Otter Creek Watershed and eastward, into the White/Connecticut River Watershed. The Otter Creek drains into Lake Champlain and eventually the St. Lawrence River. The White/Connecticut River Watershed drains into Long Island Sound. Furnace Brook and East Creek are the main tributaries that drain the western portion of the town, and the Townsend Brook and the West Branch/Tweed River drain the eastern part. The *Natural Resources: Water Features* map, in the Appendix of this document, depicts the major drainage basins of Chittenden.

Significant bodies of water in Chittenden include the Chittenden Reservoir, Lefferts Pond, and the flowing water bodies of the East Creek, Furnace Brook, Kiln Brook, Chittenden Brook, West Branch, Tweed River and Townsend Brook.

Discharges to the surface waters in the Rutland Region occur from a variety of sources and involve a wide range of pollutants. Sources are described as

either point (direct e.g. industry, wastewater treatment plants) or non-point (indirect or diffuse e.g. agricultural, roadway runoff) discharges. There is a large surface water protection area on the western slopes of the green mountain spine in the north part of Chittenden. The area is shown on the *Natural Resources: Features* map found in the Appendix of this document.

Water Resources: Groundwater

Groundwater is water that has infiltrated into the soil through sand, gravel or rock. The areas where groundwater is stored are called aquifers. An aquifer is a geologic formation containing enough water to yield significant quantities to wells and springs. Places where groundwater is replenished by surface waters are known as recharge areas. Groundwater is drawn from aquifers through wells, and areas surrounding wells are called areas of influence. In the same way that pollutants introduced from watersheds can affect the water quality of surface waters, contaminants can be introduced into ground water supplies through areas of influence and through direct discharge to the subsurface.

Chittenden generally has high groundwater quality. Protected forests combined with a sparse development pattern account for this. The potential for poorer quality groundwater does exist, however, in the town's more populated areas and where structures are located downstream from higher density areas and farms.

Potential sources of surface and groundwater pollution

- Underground storage tanks for petroleum or other hazardous substances
- Pesticide and herbicide applications on agricultural land, resorts, residential properties, and utility rights-of-way
- Failing on-site wastewater disposal systems
- Old industrial and solid waste disposal sites
- Road salt
- Development along bodies of water
- Erosion and sedimentation from construction sites and other land disturbances

Surface and groundwater protection measures

- Regulating on-site sewerage systems
- Surface water setback requirements
- Floodplain regulations
- Vegetated buffer strips
- Erosion control measures on slopes
- Protection of wetlands
- Back-road maintenance

Water Resources: Dams and Impoundments

The Chittenden Dam and Reservoir is located at the headwaters of the East Creek, two miles northeast of South Chittenden. The dam is owned, operated, and maintained by Green Mountain Power (GMP). It is a multi-purpose facility, providing a recreational benefit to central Vermont communities, but its primary function is hydroelectric power generation.

The Chittenden Dam is 51 feet high and 937 feet long. It consists of an earth and rock fill embankments, a concrete spillway and two outlet conduits. One conduit supplies a long penstock for a hydropower unit and the other outlet conduit can discharge flow to East Creek. An Emergency Action Plan, updated in 2014, is located at the Town Office and further describes the facility and course of action in case of dam failure.

Lefferts Pond, at the southern end of the Chittenden Reservoir, is a 49-acre impoundment. It is a shallow pond (10-12 feet deep) with a large wetland area associated with it.

Both Chittenden Reservoir and Lefferts Pond are important resources to Chittenden, and the Town will ensure protection of these water bodies.

Water Resources: Floodplains, Flood Hazard Areas and Fluvial Erosion

A floodplain is the flat land adjacent to rivers and streams that is periodically inundated to varying depths during periods of high water. Small floods tend to be more frequent than large ones. The 100-year flood frequency is used as the standard for delineating flood hazard areas by the National Flood

Insurance Program (NFIP). Flood hazard areas are identified on the Chittenden *Natural Resources: Water Features* map in this document.

The 100-year flood will have a one percent chance of being equaled or exceeded in any given year. The 1927 flood is estimated to be a 100-year frequency flood and was used as a standard for mapping Rutland region floodplains. The town of Chittenden has a minimally sized floodplain along the East Creek, south of the South Chittenden town center.

Fluvial Erosion is the most predominant form of flood damage in Vermont and has significant impacts in Chittenden, as noted in the Local Hazard Mitigation Plan. This process refers to streambed and stream bank erosion, often associated with catastrophic physical changes in river channel location and dimension during flood events. The high cost and frequency of damages associated with fluvial erosion is Chittenden's geography. It is a mountainous town of narrow valleys and powerful, flashy rivers and streams. The climate is extreme, with intense rainstorms, deep snows and destructive ice jams.

The most cost-effective way for the Town of Chittenden to mitigate flood hazards is to limit building in river corridors. In addition to preventing future flood losses to structures built in hazardous areas, this approach avoids constraining a river, allowing it to become more stable over time.

Vermont Statutes Annotated, Title 24, Chapter 117, section 4424 specifically authorizes towns to adopt zoning for shorelines, floodplains and other hazardous areas, including fluvial erosion zones. The adoption of floodplain management policies, including fluvial erosion hazard area restrictions, is strongly encouraged by the State and Federal Emergency Management Agency.

See the *Flood Resilience* section of this plan for more information.

Water Resources: Wetlands

Wetlands are land areas that are saturated with water at least part of the year and include marshes, swamps, sloughs, fens, mud flats, and bogs. They provide important wildlife habitat, but also play a

critical role in local water management. They serve as an additional filter for stormwater runoff and limit erosion by slowing the progress of water into a lake or river system. They are also storage basins for chemicals such as phosphorous and help minimize algae blooms and nuisance aquatic growth during the summer.

Wetlands are located in three general areas in Chittenden: along East Creek and Furnace Brook; adjacent to Chittenden Reservoir and Lefferts Pond; and along small streams at high elevations between mountain peaks. The wetlands in Chittenden are shown on the *Land Cover* map in the Appendix of this plan.

Wetland losses may be incurred both directly and indirectly. In addition to direct loss of acreage, the quality of habitat may deteriorate due to several factors including invasion of exotic weeds; vulnerability to a variety of pollutants; litter from recreational users; and atmospheric pollutants. Wetlands should be included in a conservation or resource protection district and no development should be allowed in, or adjacent to these areas.

Classes of Wetlands

Wetlands are identified by three parameters: hydrology, soils, and vegetation. Class I and II wetlands are considered significant and are protected by the Vermont Wetland Rules.

Class 1: Class One wetlands are those which the Vermont Water Resources Board determines are exceptional or irreplaceable. Only two have been identified in the State.

Class 2: The rules designate most wetlands shown on the National Wetland Inventory (NWI) maps and those wetlands contiguous to mapped wetlands as Class Two wetlands. A 50-foot protected buffer zone is designated adjacent to all Class Two wetlands.

Class 3: Class Three wetlands are those which are either considered not significant for producing any wetland functions when last evaluated or that have not been mapped on the NWI maps. Class Three wetlands are not protected under the Vermont Wetland Rules. They may play important local functions and can only be regulated at the local level.

Wildlife and Vegetation

The benefits provided by wildlife habitats and other natural and fragile areas are numerous. They contribute to the economy by attracting travelers, recreation seekers and wildlife admirers, and they add to the community's character and sense of place.

Wildlife habitats and other natural and fragile areas are mapped generally by the state and include deer wintering areas (deer yards), bear habitat, migratory staging areas for waterfowl, fisheries and sites for rare plants and animals. A number of these features are depicted on the Chittenden Natural Resources Map.

Other types of wildlife habitat include large forested tracts capable of supporting larger mammals and wildlife corridors that connect habitat areas together. A wildlife corridor is an area of land used by wildlife to travel from one large block of habitat to another. In the Rutland Region, the two blocks are the Green/Taconic Mountains and the Adirondacks, with a number of smaller "stepping stones" in between. While most animals do not cover the entire distance between the mountain ranges, maintaining a continuous network of habitat from one to the other allows for genetic flow between animal populations and lets individuals range as far as they need.



Photo: RRPC Staff

Most of the vegetation in Chittenden is a mix of Northern Hardwood Forests, Montane Yellow Birch-Red Spruce, Montane Spruce Fir Forest, and Subalpine Krummholz forests, depending upon elevation. The Cape Old Growth Hardwood Forest is located in the northern part of the town. (Source: Vermont Department of Forests, Parks and Recreation; <http://www.vtfpr.org/>)

The western-most part of the town, in the *Vermont Valley* biophysical region, is a mix of agricultural land and deciduous and coniferous forestland.

Goal (Natural Resources)

- Support and ensure the long-term protection of natural resources.

Objectives

- Protect important soils, such as agriculture and forestry soils, when considering future development in the town.
- Protect and retain the quality of surface water, groundwater and wetland resources and enhance opportunities for access, recreation, education and natural beauty in these areas.
- Protect fragile, unique habitats and open space and scenic resources from the adverse effects and encroachments of development.
- Control development within areas subject to periodic flooding.
- Prohibit development that fractures contiguous tracts of habitat area.

Tasks

1. Identify and protect a functional, interconnected system of habitats
2. Continue implementation of forest management plans.
3. Maintain large forested blocks of land within Chittenden and between Chittenden and neighboring communities.
4. Settlement should be sited in a manner which is not disruptive to visual quality.
5. Require applicants proposing projects that may have broad visual and sound impacts (telecommunications and radio towers, wind turbines and ridgeline development, for

example) provide a detailed view-shed and sound analysis prior to construction.

6. Innovative design techniques are strongly encouraged to reduce the impacts of development on agricultural and forest lands.
7. Require utility lines to be buried in all new construction.
8. Require use of energy efficient, shielded non-glare lights for any new street lighting, parking areas and signage.
9. Inventory significant scenic resources and open spaces.
10. Enact appropriate regulations that protect mountaintops and ridgelines from development that would destroy scenic value.
11. Establish quantifiable measures for maintaining water quality, minimizing erosion and protecting wildlife habitat.
12. Preserve and protect the recreational value of unique geologic resources.
13. Existing sand and gravel operations should be permitted to continue operation subject to appropriate conditions relative to surrounding residential uses, and to mitigation of impacts on wetlands, aquifers, streams, and ponds. When extraction operations cease, the land should be properly reclaimed so that, at a minimum, it may serve as passive open space.
14. Wetland and river areas shall be retained in their natural state for the provision of wildlife habitats, retention areas for surface runoff, prevention of erosion, and recreation and scenic value.
15. Reduce erosion and siltation of shorelines and stream banks by requiring proper stabilization measures and vegetated buffers for new construction.
16. Incorporate floodplain management policies and fluvial erosion hazard identification into land use planning.
17. Preserve public access to surface waters for recreational uses such as canoeing, kayaking and fishing.
18. Discourage all development within the 100-year floodplain/flood hazard areas, river corridors and areas with high water tables.

Historic Resources

Historic resources include important historic structures, sites or districts, and any areas of archeological significance. This designation may also include significant views and/or vistas, scenic routes and recreation areas. All of these features contribute to the definition, cultural development and character of a community. Identifying, locating, and preserving historic resources is highly desirable. All of the features mentioned above should be identified, mapped and evaluated for preservation or enhancement as best suits the needs of the community.

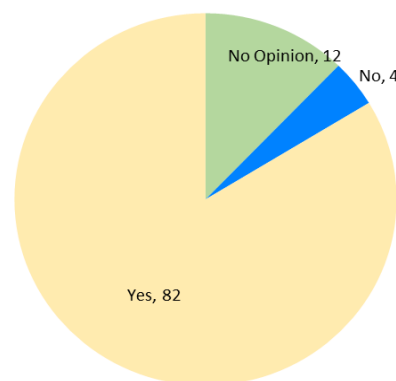
Chittenden possesses a variety of historic resources which enhance the character of the community, provide opportunities for residents, and contribute to the vitality of the town. The town's two densely settled areas, South Chittenden and Holden (also referred to as North Chittenden), have been centers of economic and social significance since the earliest settlers. Other settlements, such as New Boston and Philadelphia, have played a role in Chittenden's development and remain important historical resources for the community. Chittenden's architectural legacy, cultural history, and unique visual identity contribute to the creation of community, historic pride, and economic advantage. These assets must be carefully managed.

Chittenden has a rich prehistoric and historic legacy, as is evident in the settlement and land use patterns, residential structures, remains of old commercial and industrial businesses, cemeteries, archaeological sites and community gathering places throughout the town. The town has two historic districts, according to the State of Vermont: Holden Historic District and Chittenden Village Historic District.

In the late 1980s, the State Division of Historic Preservation published an inventory of the historic structures in Rutland County entitled, *The Historic Architecture of Rutland County: including a listing of the Vermont State Register of Historic Places*. The publication details the historic districts and buildings in Chittenden.

There are 63 buildings in Chittenden on the state register of historic places. The earliest recorded structures date from the last quarter of the 18th century and are generally 1.5 story Cape Cod types. Second generation houses from the mid-19th century generally were classic cottage type homes with Federal and Greek Revival Styles. Also, during the mid-19th century larger 2.5 story vernacular farm houses with Georgian Plans in the Federal and Greek Revival style began to appear. Toward the end of the 19th century houses with Victorian details such as Italianate and Queen Anne began to appear. Early 20th century buildings include the Hydro-Station and Barstow School in the Colonial Revival Style. (Source: Vermont Division of Historic Preservation. Curtis B. Johnson, editor; Elsa

Figure 18. 2015 Survey Results: Should Chittenden preserve its historic homes/structures?



Gilbertson, assistant editor. *The Historic Architecture of Rutland County: including a listing of the Vermont State Register of Historic Places*. Montpelier, Vermont: Agency of Development and Community Affairs, 1988).

Several organizations in Chittenden are dedicated to the preservation of the town's historic resources as well as public education. They include the Chittenden Historical Society and Historic Buildings Preservation Committee, which are supported through fundraising efforts and membership dues. Their most significant project is the continuing rehabilitation of the Grange Hall (originally a Congregational church), constructed in 1833. Visit the Historical Society's website at www.chittendenhistory.org.

The population in Chittenden includes second homeowners and others not historically tied to the

area. This increases the important role of historic resources in providing a continuous story of how the town developed. Historic buildings will require rehabilitation, and the town will continue to face the challenge of integrating historical features with current needs and goals. Additionally, as the population changes, the town will need to develop new mechanisms to effectively communicate with the public.

Goal (Historic Resources)

- To protect, preserve and maintain historic sites and structures.

Objectives

- Places of outstanding historic value should be protected.
- Encourage, where practical, the preservation, restoration and adaptive reuse of historic public buildings and privately owned structures.
- Support the protection and preservation of prehistoric and significant archaeological sites.
- New development, construction and rehabilitation activities should be compatible with existing Chittenden infrastructure.
- Encourage new construction that is compatible with the historic character of the community.

Tasks

1. Develop and maintain a complete inventory of historic structures.
2. Support public and private efforts to preserve and restore historic resources with the help of organizations such as the Chittenden Historical Society and Historic Buildings Preservation Committee.
3. Pursue grant opportunities, in collaboration with community organizations, to continue to protect and preserve Chittenden's historic resources.
4. Maintain a listing of resources in the Town Office for historic preservation and restoration.

Land Use and Development

The natural environment has played an important role in shaping Chittenden's image, appearance and attractiveness to town residents, seasonal homeowners and tourists. Our current land use has a major impact on the overall economy of Chittenden and affects agriculture, forestry, recreation, hunting, fishing and tourism. In a subjective sense the land is basic to the aesthetic value that makes this area unique. It fosters and nourishes the lifestyle of the residents. Preserving and protecting the tracts of open, undeveloped land should have high priority in our municipal planning goals. However, where it is appropriate, and the community has considered and reached a consensus, this Town Plan should contain provision for conversion of some land to resource production and development.

As new development opportunities present themselves, the Town of Chittenden must balance preservation of its community and character with support of opportunities for economic growth. This section, together with the other sections of this plan, provides guidance for future growth and development. Chittenden encourages planned growth and concentrated development in appropriate areas and is consistent with direction provided in Vermont's planning laws (24 V.S.A. Chapter 117).

This town plan is not a zoning ordinance. It is intended to be the foundation for community programs and decision-making. The plan allows the town to express its voice in Act 250 land use permitting proceedings.

Existing Development

Settlement patterns in Chittenden were initially determined by available waterpower, transportation routes and quality agricultural land. The combination of these factors led logically to the development of Holden (North Chittenden) and then South Chittenden. These two areas continue to be the most densely settled areas of town. However, over time residential units have filled in along the roadways radiating out from these two centers.

Principal nonresidential land uses are timber and forestry management and production, farming, watershed, hydroelectric power generation, hunting and fishing and other recreational activities.

The Town of Chittenden has one operating dairy farm. The town also has several tracts of land, including former dairy farms, which support horses, sheep, goats, poultry, ducks, geese, etc. on a hobby and recreational basis.

Much of the land in Chittenden is under public ownership. Most of these lands are owned by the U.S. Federal Forest Service through the Green Mountain National Forest. Below is a partial list of public and private holdings in the Town of Chittenden:

Public Lands

U.S. Forest Service

Acreage: Approximately 29,465 acres
(Green Mountain National Forest)
Location: Eastern half of the town
Use: Timber and forestry management, watershed and wildlife protection, recreation

U.S. Fish and Wildlife Service/Department of the Interior

Acreage: 35
Location: Dwight D. Eisenhower National Fish Hatchery
Use: Fish production; tourism

State of Vermont

Acreage: 263
Location: Mount Carmel State Forest
Use: Recreation

Proctor Village Forest

Acreage: 1,639 acres calculated
Location: Watershed of Kiln Brook and Boiling Spring
Use: Town water supply for Proctor

Pittsford Town Forest

Acreage: 288 acres
Location: Northwest
Use: Watershed protection and town water supply for Pittsford

Chittenden Town Forests

Acreage: 202-acre Lead Mine woodlot
115-acre Michigan Brook woodlot
138-acre Rutland Grammar School woodlot
110-acre Mount Carmel woodlot
Location: Central and northwest Chittenden
Use: Logging and town business

Other public lands are discussed in the *Public Facilities and Services* and *Recreation* sections of this town plan.

Private Land

Green Mountain Power (GMP)

Acreage: Reservoir: surface area 721 acres.
Other land: 106.28 acres (Source: GMP)
Location: Chittenden Dam/Reservoir; Dam Road; Powerhouse Road
Use: Hydroelectric generation, day recreational use, flood control

Vermont Land Trust

Acreage: Approximately 220 acres
Location: West central Chittenden
Use: Farm and forestry preservation

A. Johnson Lumber

Acreage: 923 acres
Location: East central Chittenden
Use: Logging.

Other privately held lands can be viewed on the maps included in this plan.

Building Activity

Recent building activity in Chittenden has been primarily residential in nature. See Figure 14, page 43, for a list of the building permits issued since

2001 in Chittenden. To view the number of taxable parcels by category, see Figure 11 page 18.

Future Development

To be consistent with the goals outlined in this plan and state law, future growth should be guided into already developed areas as much as possible. While there is no desire to stop development, all are encouraged to develop in a way that will protect open land, forestland and agricultural land. Any and all rules, policies and limited land use are not intended to restrict anyone’s rights, but rather to ensure that, through good management, the land will provide great use and pleasure to everyone in the future.

Where and How Development is Encouraged

Intermediate Slopes and Terraces

The area of intermediate slopes and terraces is a transitional zone between the valley floor and steep slopes. Its landscape is characterized by undulating topography interspersed with small terraces, plateaus and knolls. Because of this diversity, settlement in these areas will have minimal visual impact if properly sited. Settlement shall generally occur in these areas and take advantage of natural terrain and other scenic features.

South-Facing Slopes

In winter, cold prevailing winds are from the northwest. The sun’s orientation and altitude decrease in winter, reducing the duration and angle of exposure on northern slopes. Snow accumulations and frost tend to be greater and remain longer on northern slopes. In the same regard, growing seasons for vegetative cover are shortened. Consequently, buildings on north-facing slopes usually require greater amounts of insulation and/or energy to provide comfortable interior climates. By contrast, buildings oriented towards a southern exposure benefit from longer periods of sun during the winter, protection from wind and longer growing seasons. Where practical, settlement should occur on south-facing slopes.

Forest/Open Field Edge

Maintaining Chittenden's open fields, wildlife corridors and unbroken productive forests are all top priorities of this plan. It is also important for residents and landowners to have room for future development. Building along the border between these open and forested areas will have the least impact on the community's economic potential and natural habitat and will give all residents and visitors the opportunity to share the scenic beauty of the town. Development is strongly encouraged to take place on the border between open fields and forested land to avoid the loss of either important resource.

Areas Sensitive to Development

Land that contains natural constraints on development (steep slopes, floodplain, aquifers, etc.) should be developed only when adverse impacts can be adequately prevented or mitigated. In developed areas, the appropriate reuse of existing buildings is the preferred method of accommodating new uses. Redevelopment may be appropriate where existing structures are unsound or unsuitable. If new construction is proposed, it should be compatible with existing uses and development. The Land Use Map should be a guide for future growth areas in Chittenden.

Agricultural and Forest Land

Agriculture and forestry are important economic activities in Vermont. They are also the foundation of a highly valued rural lifestyle and have been a significant factor in shaping the landscape. Land capable of supporting agricultural uses requires prime soils as well as moderate slopes, adequate parcel size, and access. Lands capable of supporting forests are critical to silviculture as well as to wildlife habitat and recreation.

Public forestland makes up approximately two thirds of the total land area in Chittenden and serves to protect the natural resources of the town. The Green Mountain National Forest, Mount Carmel State Forest, Proctor Village Forest, Pittsford Town Forest, and four Chittenden Town Forests are all located within Chittenden and are shown on the maps accompanying this plan.

As of 2015, 15.5 percent of the taxable land area in Chittenden was enrolled in the Use Value Assessment Program (also known as Current Use Program). According to the Vermont Division of Forestry web site, the Current Use Program "enables landowners who practice long-term forest management to have their enrolled land appraised for property taxes based on its value for forestry, rather than its fair market value. When land is enrolled, the State attaches a permanent lien to the deed. Productive forestland appraised under this program receives this assessment as long as it is actively managed, unless the landowner decides to withdraw the land from the program, the legislature ends the program, or the parcel is discontinued by the Division of Property Valuation & Review. If enrolled forestland is developed or harvested improperly, a land use change tax is levied on the developed portion and all or a portion will be discontinued from Current Use." (Source: http://www.vtfpr.org/resource/for_forres_useapp.cfm)

According to VSA Title 32 Taxation and Finance, Chapter 124 Agricultural and Forest Lands, Section 3751, Current Use has an important role in the conservation of land in Vermont:

The purpose of this subchapter is to encourage and assist the maintenance of Vermont's productive agricultural and forest land; to encourage and assist in their conservation and preservation for future productive use and for the protection of natural ecological systems; to prevent the accelerated conversion of these lands to more intensive use by the pressure of property taxation at values incompatible with the productive capacity of the land; to achieve more equitable taxation for undeveloped lands; to encourage and assist in the preservation and enhancement of Vermont's scenic natural resources; and to enable the citizens of Vermont to plan its orderly growth in the face of increasing development pressures in the interests of the public health, safety and welfare. (Added 1977, No. 236 (Adj. Sess.), § 1.)

Open Space and Scenic Resources

In the course of planning for Chittenden's future, it is important that the presence of high quality open space and scenic resources, broad scenic areas and

scenic landmarks are recognized and preserved. Scenic resources have aesthetic, historical and economic value. Siting of future construction, as well as community facilities and infrastructure, should always consider the potential impact on aesthetic qualities of the community and preserve the undisturbed integrity of Chittenden's quality scenic and open resources.

Conservation Areas

Conservation areas within Chittenden are those lands that contain natural features or natural limitations that reduce the ability of the land to support extensive development. Because of the severity of their limitations or natural significance, some conservation areas are more sensitive to disturbance than others. The areas identified as being most severely limited are: floodways, habitat of flora or fauna which are designated as threatened or endangered, and all lands above 1500 feet in elevation. Other areas include steep slopes, shallow soils, wetlands, prime agricultural soils and floodplain outside the floodway. It is recommended that these areas remain as open land. Allowable uses should be: agriculture (with Acceptable Agricultural Practices at a minimum, and preferably with Best Management Practices), forestry (with Acceptable Management Practices), recreation uses which do not require the use of pesticides or herbicides, and non-structural public uses. New residential and commercial/industrial uses should be prohibited in Conservation Areas.

Goals

- Encourage strategic growth and economic development while protecting existing cultural, historic and natural resources.
- Provide for public safety when advancing development patterns in town.
- Promote responsible management and use of Chittenden's agricultural, forest and conservation areas.

Objectives

- Protect the character of rural areas and resource areas by discouraging scattered development and incompatible uses.

- Support agriculture, forestry, and other practices that make responsible use of the town's natural resources.
- Recognize the link between land use and public facilities/services and coordinate their planning and development.
- Encourage orderly and attractive development of commercial areas.
- Protect and promote conservation, agricultural and forested lands.
- Promote appropriate use of agricultural and forest lands.

Tasks

- Encourage development and economic growth in Chittenden in ways that reinforce the general character and planned growth patterns of the town.
- Critically review and evaluate development which generates undue stress on public facilities and services.
- Ensure that future development provides for adequate streets, utilities and open space and the preservation of the character of surrounding properties, the expense of which is to be borne by the developer.
- Require applicants proposing projects that may have broad visual impacts to provide a detailed view-shed analysis as part of approval for construction.
- Strongly encourage innovative design techniques to reduce the impacts of development on agricultural and forest lands.
- Develop a list of town owned parcels on which title searches should be conducted.

**Amendments, additions, deletions and revisions to the
Chittenden Town Municipal Plan as approved by the Select Board.**

Date enacted: _____ Page/line number: _____

Section: _____ Subdivision: _____

Text of change: _____

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