Chelsea

Draft Town Plan

For Public Hearing Tuesday, November 12, 2013

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I. Goals of the Plan

It is the intent and purpose of this Plan to guide development and use of land and buildings in the Town of Chelsea in a manner consistent and compatible with the needs and desires of the residents of the Town. In addition, the Plan is designed to promote the public health, safety, efficiency, economy, and general welfare. It is hoped that the development and implementation of this Plan will help the residents of the Town to realize all the benefits of rural life including clean air, clean water and open spaces for recreation, and will promote physical development that will foster a spirit of community among the residents of Chelsea.

A. Plan Definitions

State statute requires that all plans have a "statement of objectives, policies and programs of the municipality". In this plan, this requirement is met through "goals, policies and recommendations". Goals, policies and recommendations of a plan must be viewed as an integrated system of statements that have clear relationships to each other and to the body of the Plan. The definitions of these terms must be made clear for the understanding of each plan section as well as the coordination of the plan sections with each other. The terms defined below are used throughout the Plan:

Definitions:

- **Goal**: Why something should be done - the state of affairs that a plan is intended to achieve.
- **Policy**: What should be done - an expression of how to meet a goal.
- **Recommendation**: How should it be done - a specific action that is advised to be taken in order to implement a policy.

Examples:

- Goal: Increased public safety for pedestrians.
- Policy: All the crosswalks in Chelsea should be painted with diagonal lines to alert vehicular traffic to the crossing of pedestrians.
- Recommendation: The Selectboard should work with the public works department to have the crosswalks painted.

The goals, policies and recommendations in the Plan are not listed in ranked order of importance; they are numbered for ease of reference.

B. General Goals

The goal of this Plan is to create a balance between the protection of Chelsea's rural character and the need for future growth and development. The following items have been identified as the overarching goals of the Municipal Plan:

1. To preserve sufficient space in appropriate locations for forests and agriculture, for residential, recreational, commercial, and industrial development, and for public and semi-public facilities.

2. To achieve the goals of this land use plan through education, facilitation, cooperation and financial incentives.
3. To promote and retain affordable housing for working families and the elderly.
4. To protect soil, forests, water and natural resources.
5. To protect the historic features of Chelsea, to allow the growth of the Town in a manner that will continue the rural and village environment.
6. To encourage a rational and convenient pattern of settlement, and to encourage and enhance the attractiveness of the Town.
7. To provide adequate and efficient transportation system, schools, parks, and other public facilities and to encourage the appropriate and efficient expenditure of public funds.
8. To encourage agricultural and forest uses.
9. To ensure that the Town can adapt to the growth rate in order to be able to provide facilities and services.
10. To encourage economic development that offers jobs at a livable wage for Chelsea's citizens.
11. To promote a balance between open space and development.

C. General Recommendations

The goals in this Municipal Plan speak directly to protecting those special qualities which Chelsea residents have treasured for over 225 years: its historic village area, rolling farm and forest lands, steep mountain ridges, and clean brooks and rivers. Each of us has a special place in town that we like to visit or just set our eyes upon.

The Town of Chelsea has been committed to protect the landscape and rural character of the community for many years. During these years the Planning Commission has invited public input into the planning process and has found continued support for the protecting of the community's rural and historic character.

The Planning Commission recommends that specific actions be implemented over the next five years to promote a balanced approach to growth - supporting land conservation while encouraging economic development. The Planning Commission is firmly convinced that such a balance can and must occur through the cooperative efforts of Town leaders, landowners, residents and organizations that promote such efforts.

D. Vision Statement

The Chelsea Planning Commission has attempted to capture the five-year vision for the future of Chelsea in this document. This Plan describes a vision of a town where people respect and use the land well, where forestry and wild lands, agriculture, small businesses and commuters live comfortably together. The Plan creates a vision that respects the rights of its citizens to own their land and to use it how they see fit as long as it maintains the character of the community. Through the process of drafting this plan, the Planning Commission has invited public input to determine what Chelsea's vision for the future should

be.

E. Why Have A Plan? – Purpose

A municipal plan is intended to act as a vision for the community. A community imagines what the future should be, and then starts putting these ideas into action. Communities with little or no planning are more likely to experience problems because the lack of local control leaves them subject to decisions made at the state level that might not accurately implement their vision. Chelsea, like every town, has choices in the way it provides for orderly growth and in the way it balances growth with natural and built environments. Planning is done to meet the needs of the people who are here now in the face of change and for those in the future.

The Plan includes a comprehensive analysis of Chelsea's demographics, jobs, economy, schools, roads, housing, natural resources, and land use. This analysis of current conditions in the context of goals for our community, leads to policies and recommendations that can help our community make wise choices and provide direction for the patterns of its future growth.

Here are some specific reasons to have a Town Plan:

- **Guide for local regulations** - State statute requires that all land use regulations (zoning, subdivision, etc.) must be consistent with the goals of the local plan. The municipal plan functions as the framework under which these regulations operate.
- **A guide for community investments -** Information in the plan can be used for developing the recommendations contained in a Capital Budget and Program, for establishing a community development program, and for providing direction to the Selectboard for such things as community services, emergency services, recreation and municipal facility development to name a few. It also serves to guide the decisions made by the Development Review Board when permits come before them.
- **Support for grant applications and planning studies** - Many of the state run grant programs available to Chelsea consider whether or not the town has stated a need for its grant request. Studies are often called for within a plan, and the funding for such projects can come from state sources as well.
- **A guide for future development** - The District Environmental Commission considers Town Plans during an Act 250 hearing under Criterion 10. The Plan should clearly define what is and is not appropriate in terms of development within the community.

F. Defining Rural Character

The District Environmental Commission will often look to a Town Plan for guidance with regard to the issue of "rural character." Too often this concept is poorly defined and/or too vague to be useful in a legal proceeding under Act 250. Therefore, for the purposes of this document, it is necessary for the Planning Commission to attempt to define what residents view as the "rural character" of Chelsea.

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Chelsea has a picturesque, compactly settled village that hosts the Windsor County Courthouse. The village of Chelsea provides an efficient place to conduct business and support social and community facilities and services, but the majority of the useable land is located in the floodplain. Geographically, Chelsea is far enough from main travel ways like Interstate 89 and 91 to seem sheltered and rural, but close enough to areas of employment to make commuting reasonable. Rural development, which is primarily residential in nature, is generally clustered around roads. Most town roads are gravel roads that are more appropriate for the types of traffic common to residential development than large-scale commercial development.

The community is a mix of woods, open-spaces and valley floor, all of which create an aesthetically pleasing natural environment. The First Branch of the White Rivers creates an area of open valley floor that is rich in soil quality as well as open, scenic beauty. Development within Chelsea remains sparsely organized, blending in with the landscape in such a fashion that it does not negatively impact the scenic quality of the community.

G. History

In 1781, the town that is now Chelsea was granted a charter under the name of Turnersburg by the General Assembly of the independent Republic of Vermont.

Settlement was commenced in 1784 and by 1800 there was a listed population of 897 people. 1984 marked the Town’s bicentennial. Town government was organized in 1788 and in the fall of that year the town's name was changed to "Chelsea" by petition to the General Assembly. Most of the early settlers here were of English descent and came here from lower New Hampshire, Massachusetts, and Connecticut. It is thought the name Chelsea was promoted by former residents of Norwich, Connecticut.

A unique feature of Chelsea village is the two commons, or "greens", as they were called in the early history of the Town. North Common dates to 1795 when the Town purchased "a piece of land for a public parade" paying five pounds, English money. In 1802, a prominent early citizen of the Town gave land to erect a courthouse and jail and for a "new common" which when cleared became the South Common.

From the early settlement on, the town has had a farm-based economy, evolving through subsistence farming, grain farming, sheep raising and eventually to dairy farming. In 1880, there were 200 farms in Town. Various changes and pressures have reduced the number of working dairy farms in Chelsea. The 1960s began the decrease in Chelsea’s agricultural economy and land use. The bulk tank requirement of 1962 contributed to decreases in dairy farming.

Chelsea is located near the center of Orange County and in 1795; it was designated as the seat of county government, thus becoming the "Shire Town" to use an old English term. The courthouse that stands at the head of the South Common was built in 1847, on nearly the same site as the 1801 structure. In 1796, a

first jail was erected on nearly the same site as the present one which was built in 1864. Several offices pertinent to county government are located at the courthouse and at other locations around the village.

A Congregational Society was organized in Chelsea in 1789 and in 1989 celebrated its 200th year. In 1813, the group completed construction of their church that stands at the head of the North Common. In 1833, six different religious denominations joined forces to build a Union meetinghouse on the West Hill. This church, now the West Hill Methodist Church, recently celebrated their 150th anniversary. A Methodist Church was built in 1837 on North Main Street where the Chelsea fire station now stands. In 1929, the two village churches united their congregations. Unable to maintain both church buildings, the Methodist Church was taken down in 1955.

Education was an early priority for New England towns, and Chelsea was no exception. Within ten years of settlement, the Town had erected a schoolhouse in the village. In the early 1800's, when the local population reached its peak of nearly 2,000 inhabitants, the town was divided into 18 school districts and had 17 district schools. There was a Chelsea Academy (1851-1870), from which evolved the Chelsea High School. Since 1971, all students K-12 have been taught at the village school location near the South Common.

Chelsea has received considerable positive recognition for its twin commons and its fine old buildings some dating prior to 1800. Most of the brick buildings were built in the period 1820-1835 with the exception of the Town Hall, which was dedicated in 1894. The local Historical Society was instrumental in establishing a Chelsea Village Historical District; it includes the area between the north and south bridges of the village. The Design Control District Ordinance was adopted in 1986 and then amended and incorporated into the 1998 Zoning Bylaw as Article 7. In 1982, several village buildings were nominated for their historical significance, and in late 1983, the Society was notified that the local Historic District, encompassing nearly all of the central part of the village, had been officially listed on the National Register of Historic Places in Washington, D.C.

II. Demographics

The demographic nature of a town tells the reader a great deal about who the town is and what trends define its direction. To get a real-time snapshot of the town it is important to have the most up-to-date data available. Much of the content in this chapter has been taken from the 2010 US Census or the 2005-2009 American Community Survey. In other instances, state data was used.

A. Population

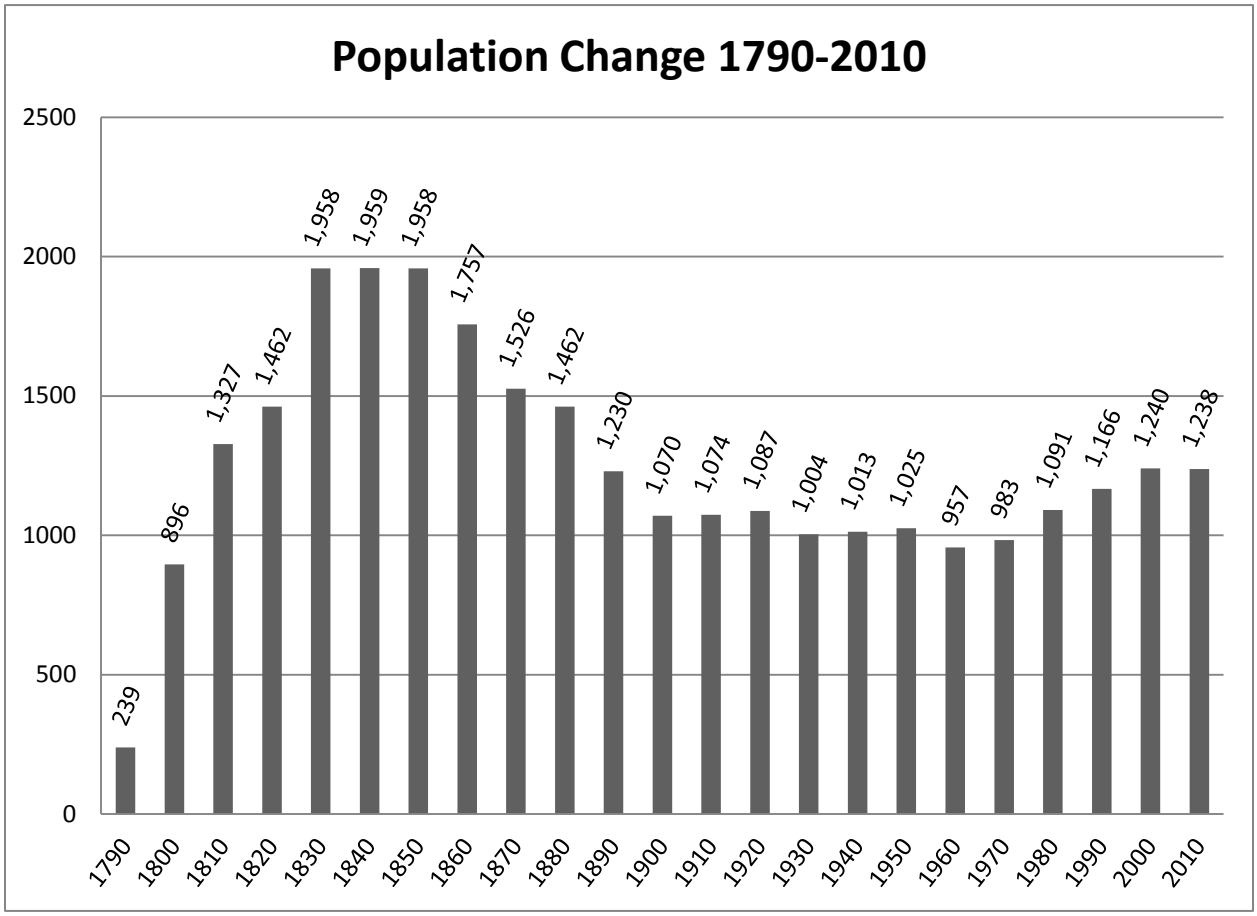


Figure 1: Population Change in Chelsea, 1790-2010 (Source: U.S. Census)

A community's population and the trends of gains and losses over time represent an important factor in the overall development of a Town. Rapid and unanticipated population increases can compromise rural character, create a demand for new and expanded municipal services, and strain the financial ability of a town to provide public services economically.

When local populations are small, as in Chelsea, land use and economic factors affecting migration rates are far more influential on short-term population changes than the more stable birth and death rates. For example, a single industry, subdivision or trailer park added to or subtracted from our community will more radically change Chelsea's short term population than the effect of our natural birth or death rate. Such an event, however, cannot be forecast in the standard demographic analysis, which is why

population projections can only serve as a planning guide. Chelsea's population change over time is reflective of many communities in Vermont. During the mid to late 1800's many Vermont towns reached their peak population. A mass exodus as citizens moved south caused a steep drop that finally stopped during the 1970's. During the twenty year period from 1970-1990, Vermont saw population increases in most communities. As a result of this trend, projections indicated a continued rise in population growth. However, between 1990 and 2010, real changes in population have not matched projected increases, with many towns (including Chelsea) losing population.

Percent of Population Change, Chelsea and Surrounding Area, 1970-2010					
Town	**1970 Census**	**1980 Census**	**1990 Census**	**Census 2000**	**Census 2010**
Bradford	1627	2191	2,522	2,619	2,619
		25.7%	*13.1%*	*3.7%*	*0.0%*
Brookfield	606	959	1,089	1,222	1,292
		36.8%	*11.9%*	*10.9%*	*5.4%*
Chelsea	**983**	**1091**	**1,166**	**1,240**	**1,238**
		9.9%	*6.4%*	*6.7%*	*-0. 2%*
Corinth	683	904	1,244	1,461	1,367
		24.4%	*27.3%*	*14.9%*	*-6.9%*
Fairlee	604	770	883	967	977
		21.6%	*12.8%*	*8.7%*	*1.0%*
Orange	840	752	915	965	1072
		-11.7%	*17.8%*	*5.2%*	*10.0%*
Randolph	3882	4689	4,764	4,853	4,778
		17.2%	*1.6%*	*1.8%*	*-1.6%*
Strafford	536	731	902	1,045	1,098
		26.7%	*19.0%*	*13.7%*	*4.8%*
Thetford	1422	2188	2,438	2,617	2,588
		35.0%	*10.3%*	*6.8%*	*-1.1%*
Tunbridge	791	925	1,154	1,309	1,284
		14.5%	*19.8%*	*11.8%*	*-1.9%*
Vershire	299	442	560	629	730
		32.4%	*21.1%*	*11.0%*	*13.8%*
Washington	667	855	937	1,047	1,039
		22.0%	*8.8%*	*10.5%*	*-0.8%*

Figure 2: Percent of Population Change, Chelsea and Surrounding Area, 1970-2010 (Source: U.S. Census)

According to the data in figure 1, Chelsea's year 2010 population numbered 1238 compared to a population of 1240 in 2000, resulting in a negligible decrease of -.2%. During the same ten year period, Chelsea's immediate neighbors (Washington, Vershire, Brookfield and Tunbridge) had a mix of gains and losses. Out of the towns analyzed for the purposes of this plan, the communities along Route 110 (Tunbridge, Chelsea and Washington) all saw losses in population.

B. Age of Population

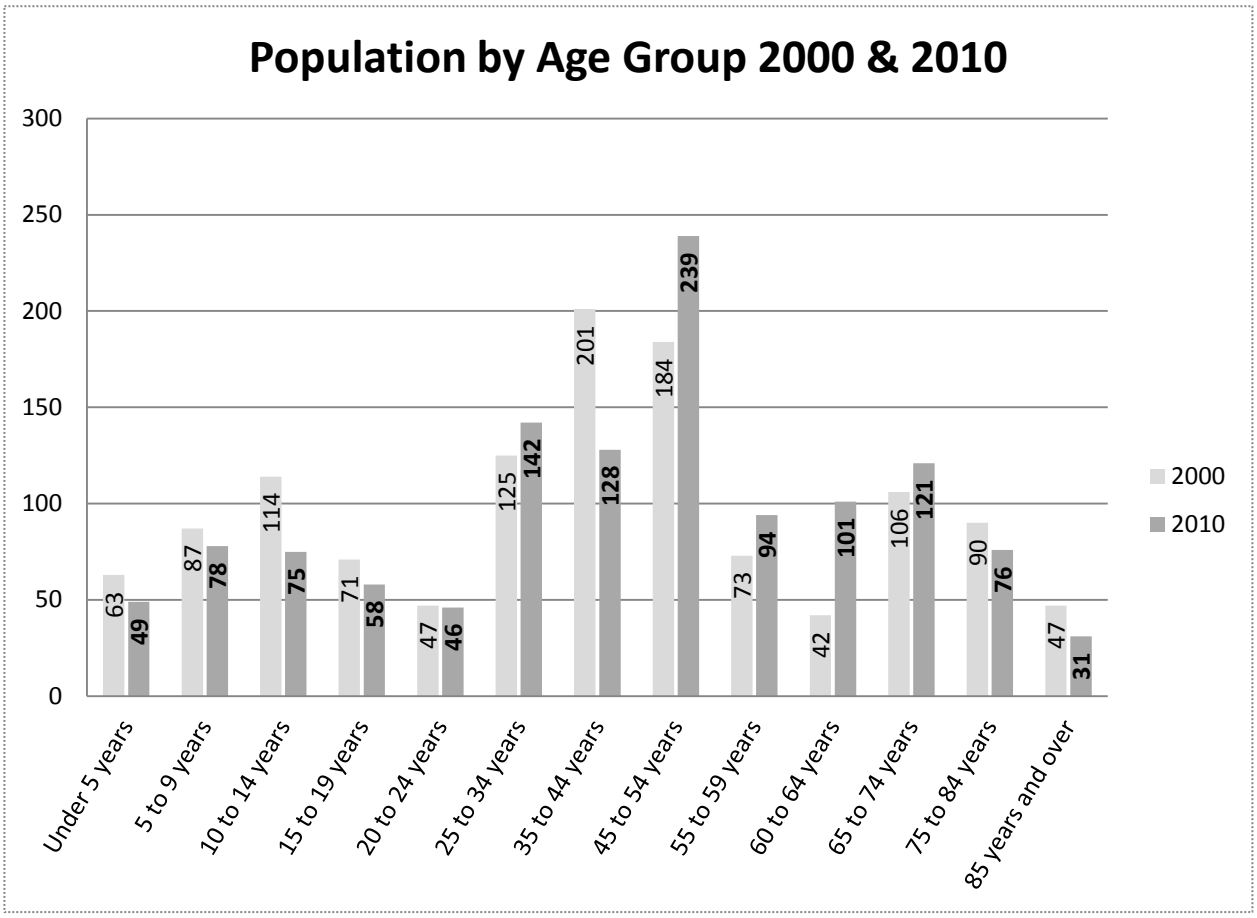


Figure 3: Population by Age Group 2000-2010 (Source: U.S. Census)

In general, the age of Chelsea's population is similar to that of Vermont as a whole, with much of the population over the age of 35 (63%). While growth was flat, the decade between 2000-2010 shows that there has been outmigration and in-migration of differing age groups. In 2000, there were 115 children aged 10-14, a decade later, the number of children aged 15-19 was only 58, indicating that children left the community rather than stayed for the decade.

The loss of young adults (generally between the ages of 25-35) has been a concern throughout Vermont during the past decade. Often referred to as a "brain drain" the out-migration of young adults raises concerns on both economic and social levels. Without a talented and well-educated pool of young workers, there are worries that the state will find it increasingly difficult to attract and retain well-paid jobs, which in turn can have serious repercussions for the state's capacity to raise tax revenues and pay for essential services. Young adults who leave their rural communities often do so because communities lack the resources commonly sought after by people of their age group, such as reliable high speed internet access, clear cell phone reception and opportunities for social interaction with others of their age group.

According to the Department of Economic Development's (DED) 2007 Report "Growing Vermont's Next Generation Workforce", Vermont ranked at the bottom nationally for the percentage of its citizens between the ages of 25 and 29, and at the top in the percentage aged 50-54. While it is common, and perhaps desirable, for young adults to venture beyond their home state after college, the biggest concern is that many are not returning. During interviews for the DED report in 2007, young adults explained that their primary reason for leaving Vermont was to find better paying jobs. Likewise, the biggest hurdle for young adults wanting to return to Vermont was the availability of well-paying jobs and affordable housing.

Those young adults who choose to return to, or relocate to, Vermont have indicated that their primary motivation for moving to Vermont is the lifestyle associated with the working landscape. Outdoor recreation, agriculture and the importance of community often encourage these citizens to return. When population change between 25-34 age group in 2000 and the 35040 age group in 2010 is analyzed, change is minimal. It appears that these residents chose to remain in Chelsea during the decade.

In another trend that mirrors statewide trends, Stockbridge also has an aging population. In 2010, 18% of the population was over 65 years of age, which is higher than Orange County (14.8%) and Vermont (14.6%). In addition, Chelsea has gained population in the 55-64 age group, thus making the total percentage of Chelsea's population over 55 almost 39% (a 6% increase in 10 years). Vermont also has the lowest birth rate in the nation (10.4 births per 1,000 of population, compared with 14.2 for the U.S) which, when coupled with immigration of residents over 55, results in an aging population that will need services that are not readily available in a town like Chelsea. The need for elderly housing will increase.

III. Economy

A. Background

Chelsea's local economy was, for many years largely based on agriculture, specifically dairy farming. Since the mid-20th century, farming has steadily declined as an occupation and in economic importance. Remaining, however, is the example of independence and entrepreneurial initiative set by generations of Chelsea farmers. These traits, along with a tradition of connection with the land, are reflected in the range of local occupations and businesses, and the purpose of this Plan is to provide a framework which will allow this tradition to continue.

The prosperity of a community depends upon the number and types of jobs available to its residents, as well as the quality of the commercial enterprises in Town. An economically depressed area is characterized by a high unemployment rate, low wages, lack of opportunities for advancement, poor community facilities and services, scarcity of good commercial enterprises and a low standard of living. Conversely, a healthy economy is characterized by vigor and stability; it is comprised of businesses with a good future and that offer good wages and opportunities for advancement. A strong tax base is the result.

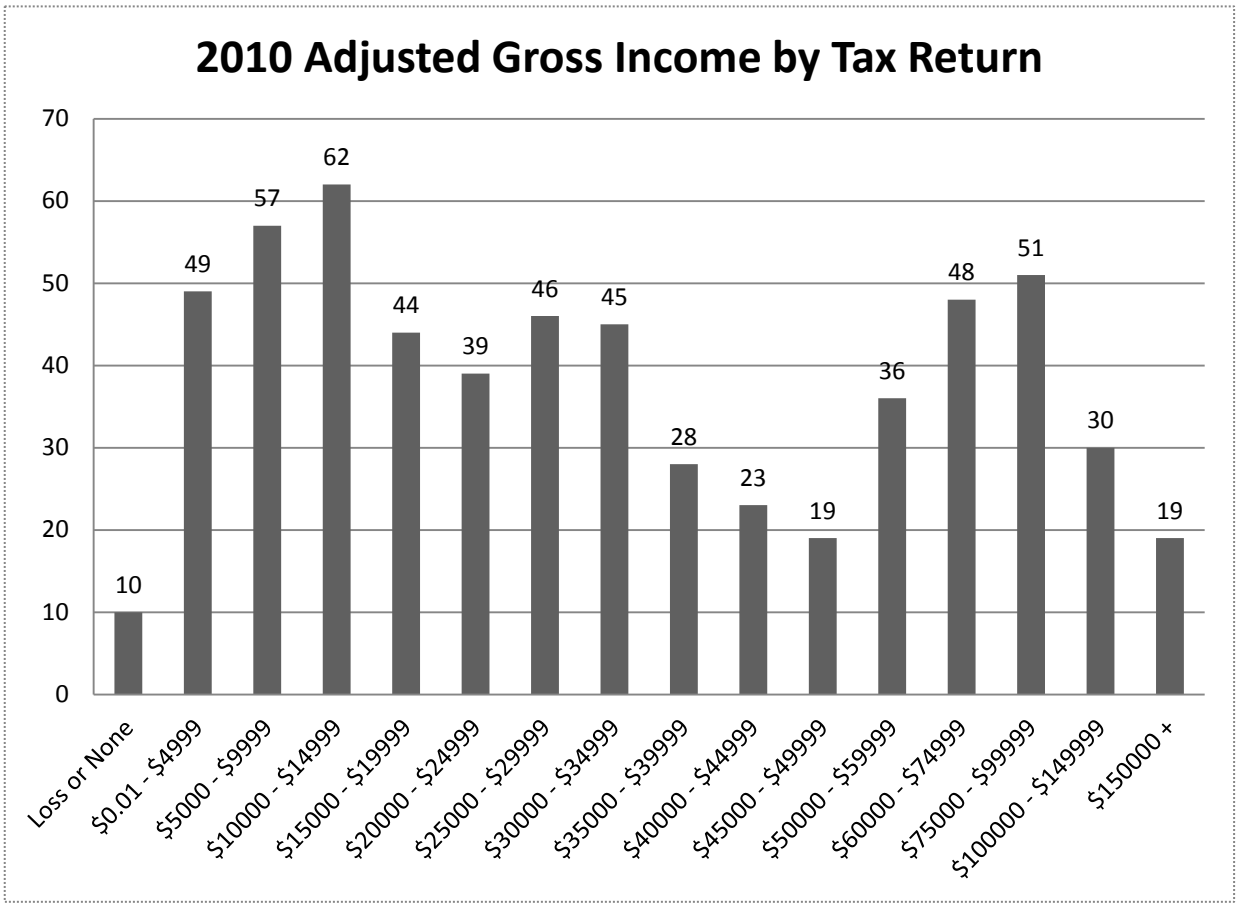
It is frequently assumed that commercial and industrial developments pay more in taxes than they cost the town in services. Prior to Act 60 a commercial development would generally show that the development would generally pay more in taxes than it cost in services. This was mainly because of the school tax. Commercial and industrial developments paid school taxes without increasing the school budget—directly at least. However, since Act 60, the tax benefits of commercial and industrial developments have changed substantially, with a majority of the tax benefits going into the Act 60 sharing pool. Commercial and industrial developments do have a noted positive impact on the municipal tax rate, which makes up roughly 1/3 of the total taxes paid by the community. The benefits of commercial and industrial developments go well beyond lowering taxes, however. Local businesses can provide sources of employment and add to the quality of the community. Chelsea encourages the addition of businesses provided that they are scaled in such a fashion that the community's resources can support them.

Schools, police and fire departments, water and sewer systems and other community facilities often need to be expanded to accommodate the population growth, which accompanies economic expansion.

B. Economic Statistics

The Vermont Department of Taxes annually publishes Vermont Tax Statistics, which includes a summary of personal income tax returns filed with the State. In 2010, six hundred and six (606) income tax returns were filed in Chelsea. Total adjusted gross personal income reported for Chelsea residents was $27,646,065 with a median income per tax return of $29,407.

According to the Vermont Department of Taxes, Chelsea's median adjusted gross income per tax filer in 2000 was $22,822. In 2010, the median had risen to $29,407, an increase of nearly 29%. The percentage



5 - Chelsea 2010 Adjusted Gross Income (Source: VT Dept. of Taxes)

of growth since 2000 of Chelsea's median family income was substantially higher than the 8% increase that occurred during the same period statewide.

For 2010, 50% of the total family income generated in Chelsea was by filers earning $30,000 or more and 50% were earning less than $30,000. The US Census Bureau sets the national poverty level on an annual basis. In 2010, the poverty level for a family of four was $22,113 in income. During that year, more than 222 (36%) of the 606 filers in Chelsea reported an income below that threshold. Given the costs of housing (discussed in chapter IV, Housing), the high percentage of residents who make $30,000 or less may struggle to afford

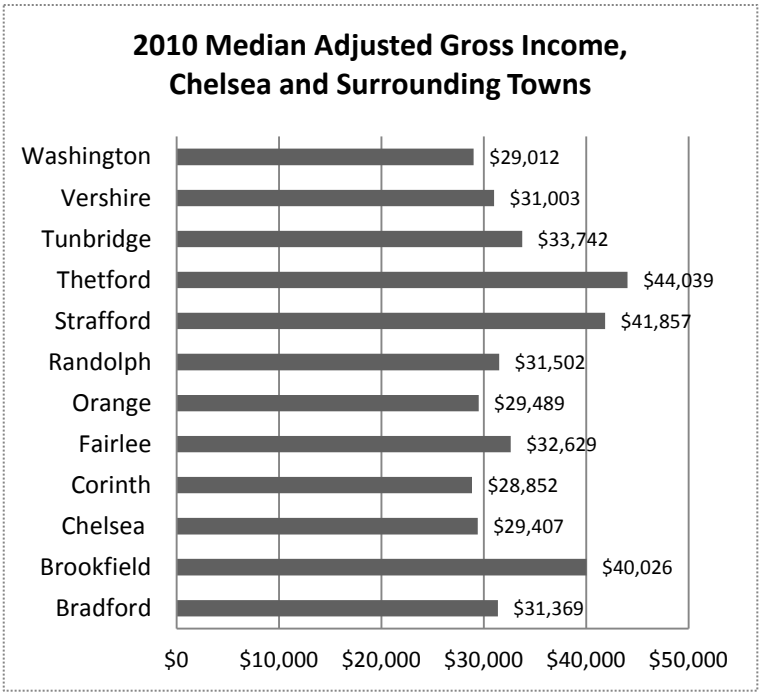


Figure 4: 2010 Median AGI, Chelsea & Surrounding Towns

adequate housing in Chelsea.

When income data for 12 of Chelsea's neighboring communities is analyzed, it becomes apparent that Chelsea's median income levels are lower than most communities. Comparatively, Chelsea has the third lowest median income, with only Washington and Corinth having lower adjusted gross median income.

According to the American Community Survey (ACS) residents have a mix of jobs in Chelsea, with the primary breakdown being management, business, science, art and service occupations. While some of the jobs held by Chelsea's citizens are in Chelsea, the majority (91%) Chelsea's workforce commutes to their job. The mean travel time to work is 31 minutes, indicating that most residents work in nearby communities.

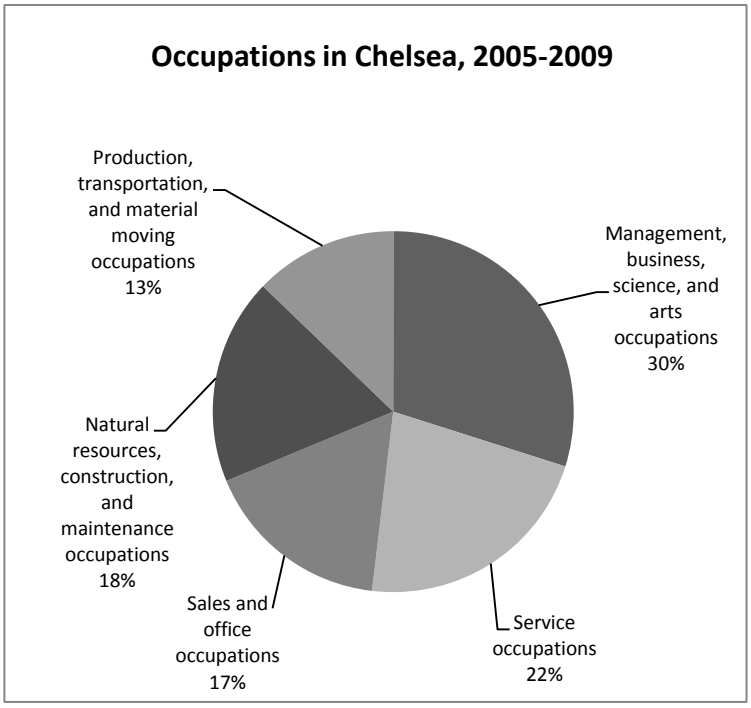


Figure 6: Occupations in Chelsea, 2005-2009 (Source: ACS)

C. Present Day Economy

Bypassed by the railroad in the 19th century and the interstate highway system in the 20th, Chelsea has never been and is unlikely to become a major economic center. Infrastructure for vigorous commercial and industrial development is currently lacking, especially in the village area.

While the village's historic character, including its two greens and classic architecture is a valuable asset to the community, the location of the village and the topography of Chelsea is a challenge. As is shown in figure 4, a substantial amount of Chelsea's village is located within the mapped floodplain. Given the age of existing mapped floodplain data, it is likely that additional parts are within the floodplain as well. The village is nestled at the bottom of a valley, with steep slopes on its Eastern and Western sides. The topography leaves the community with little choice in terms of growth of the village center. The only way for the village to grow is to the North and South along Route 110, but those areas parallel the Second Branch of the White River and are in or adjacent to the floodplain.

It is because of the complicated nature of the Village Center Area that additional areas for appropriate commercial growth have been proposed outside of the Village Center. The purpose of these areas (outlined in Chapter XI, Land Use) is to allow for continued commercial growth in locations that are not subject to the potential hazard of flooding, while allowing the existing village center to continue to be the center of the community.

The types of businesses in Chelsea are as they have been for many years. Commercial retail, restaurants, government facilities and some services are located in the Village. Outside of the village agriculture, small scale commercial and light manufacturing and home occupations continue to contribute substantially to the local economy.

D. Future Economic Development

Encouraging economic development in a small rural town like Chelsea is somewhat difficult. Because of its location and small population, Chelsea is unlikely to become a hub for commerce similar to larger towns like Randolph or Bradford. However, there are an adequate number of small businesses that provide services to the community. The presence of two schools and the Orange County District Court helps ensure some commercial viability of the village.

Figure 7: Chelsea Village Floodplain - indicated in Red (Source: FEMA NFIP maps)

However, it is certainly possible for a small town to become a destination that encourages businesses to develop. The key is to utilize niche markets that are not being filled elsewhere. Small communities like Chelsea must take advantage of local resources such as their location, physical setting and citizens. To identify niche markets and determine how to leverage the town's assets, a comprehensive planning effort must be implemented to guide growth and improve the community.

Leadership is essential to this process as economic development cannot be willed. Only through a consensus can the town form a coordinated economic development effort. This is, of course where the citizens of Chelsea have the most to offer. Key figures in the community, including small business owners, representatives of town government, realtors can join forces with active citizens to help create a vision for the economic future of Chelsea. But, because economic development takes time, all who participate in the process must be committed to a common vision of what the town wants to be.

In order to begin the process of economic development planning, citizens will have to determine what and who the town's assets are. Likewise, it will need to identify what the key needs in town are and whether or not they can be realistically offered locally. Using this information, the town should develop a mission that will help guide those involved toward the ultimate goal of encouraging economic development in Chelsea.

A 2012 study by the Urban Land Institute indicated that on a national level businesses are making their location decisions based substantially on sense of place. Likewise, young adults have indicated that their primary motivation for moving to Vermont is the lifestyle associated with the working landscape. A small community's best method of encouraging new business is to recognize its best assets, protect those assets and support any efforts to promote those assets. It is Chelsea's rural, natural and historical resources that are its greatest assets. As such, these assets should be prudently managed, since tourism is one of the most important elements of the regional and local economy.

Chelsea's Village Center represents an asset in the context of its historic architecture and scenic quality, as much as it also represents the center of the community. But, the potential for flooding tempers the Plan's encouragement of expansion in this area.

Because of Chelsea's geographic location in relation to Vermont's major travel ways (I-89 & I-91), Chelsea is unlikely to attract large, national commercial businesses. Instead, it is locally-owned entrepreneurial and home-based ventures that have the potential to create new local jobs and reduce the need for out of town commuting. That said, Chelsea recognizes the need for larger businesses, particularly light industrial that can provide additional jobs at wage rates that are liveable. Light manufacturing that fits well with the surrounding environment and does not unduly impact the rural character of the community is desirable. Commercial development that does not negatively impact the village center is also welcome. With the exception of small-scale hardware stores (such as Welch's), pharmacies or grocery stores (like Mac's market) commercial development that is formulaic in nature (such as McDonalds, Dollar General, etc.) is not welcome.

E. Land Use and Economic Development

This Plan seeks to strike a balance between maintaining Chelsea's traditional pattern of development and allowing for new pattern of development that will create jobs and stimulate the economy while locating in areas that are safer from potential flood hazard risks.

Village Center

Chelsea will choose to maintain its village center as the primary location for public facilities, including schools and town offices. Likewise, it will continue to encourage existing businesses to locate in the center. New business will not be discouraged from developing within this area, but should be aware that new developments may be subject to additional requirements to mitigate against potential flood hazard impacts if they are within or adjacent to the Flood Hazard Area. Because Chelsea's Village Center Area is essentially the heart of the community and a civic center, its health and vitality is important.

Chelsea will continue to encourage the health of its village through sensible planning and support of any initiatives that encourage economic development. To this end, Chelsea's village is part of Vermont's

Downtown Program, having had the village identified as a "Designated Village Center". The Vermont Downtown Program is a state-run program that seeks to provide commercial developers with state income tax credits for the purposes of substantially rehabilitating historic structures or implementing code improvements. The program offers some benefit to the Town in that there are several state grant programs that provide additional "points" when grant applications are considered if the community has a Designated Village Center.

Other Areas of Commerce

Outside of the Village Center, the Land Use Chapter (Chapter XI) identifies several areas that are intended to provide a hazard free location for expanding commercial development. While primary retail development should remain in the Village Center Area, other businesses should be encouraged to locate within the appropriate areas designated within the Land Use Chapter. This includes small service business, offices, light industrial and businesses that focus on agriculture. Businesses that have a primary purpose with retail as a secondary use, such as a veterinarian's office that sells pet food or a furniture manufacturing facility that has a small showroom, are appropriate outside of the Village Center Area.

Regardless of location, all businesses need to be of a scale that fits in with the surrounding area. Commercial businesses of a large scale that require substantial parking or generate substantial amounts of traffic over what is common in the area are not encouraged. Commercial developments should be designed so as to blend in with the environment and should not create nuisances for their neighbors.

The Rural Areas of Chelsea should remain primarily residential in nature, but always with the understanding that home businesses, agricultural enterprises and recreation of all kinds should be encouraged.

F. Goals, Policies and Recommendations

Goals

1. To encourage a strong and diverse local economy that provides satisfying and rewarding employment opportunities for residents while maintaining the community's rural character.

2. To strengthen and maintain the town's agricultural, forest and recreational economies and to ensure continuance of small town village and rural character.

Policies

1. It is the policy of the Town to cooperate with neighboring towns, regional planning commissions and economic development groups to plan for and maintain a balance between the type and number of jobs created and natural population growth in the area.

2. It is the policy of the Town to support the development of local enterprises that create markets for locally produced goods and services.

3. It is the policy of the Town to encourage new business development in appropriate locations where services such as roads, fire protection and power supply are available or planned.

4. It is the policy of the Town to support creation of regional economies that do not place unreasonable financial burdens on the taxpayers of Chelsea to support those economies.

5. It is the policy of the Town to attract diverse and sustainable businesses in Chelsea which jobs and contribute to the small town quality of life.
6. It is the policy of the Town to provide for reasonable zoning standards enabling home occupations and home businesses to be developed or to continue.

7. It is the policy of the Town that primary retail development shall be located in designated Village Center areas.

8. It is the policy of the Town to prohibit development that has the effect of creating sprawl, while allowing for commercial development in identified areas outside of the Village Center.

Recommendations

1. The Town encourages traffic generating industrial growth to take place in the southern part of the Town along Route 110 and discourage strip development along the Route 110 corridor.

2. The Town should work with the Two Rivers-Ottauquechee Regional Commission or the Green Mountain Economic Development Corporation to obtain funds to reserve lands in the Industrial Area for small-scale industrial development.

3. The Development Review Board should review applications for industrial development with careful attention to the environmental and fiscal impacts.

4. The Town should create an ongoing series of events to both promote established local businesses and encourage new ventures.

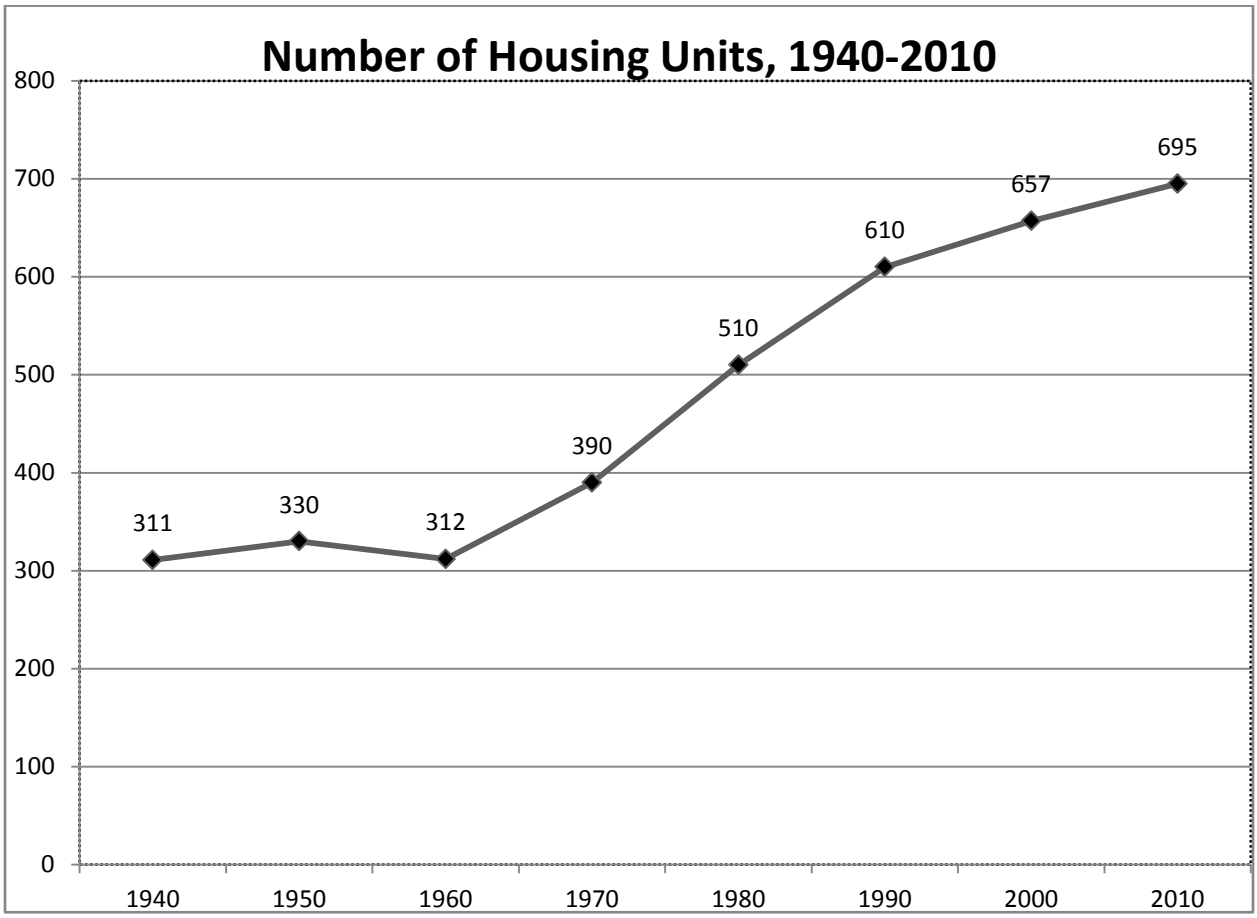
5. The Town should work to promote and find markets for local agricultural products.

6. The Town should encourage and support the responsible development of the information technology and communication infrastructure necessary for new economic growth.

7. The Town should provide assistance and incentives to entrepreneurs in order to encourage new business start-ups.

IV. Housing

A. Background and Goals



8 - Housing Units in Chelsea, 1940-2010 (Source: US Census)

The following housing goals have been established to guide housing development:

- To encourage safe, decent, adequate and suitable housing for all of Chelsea's residents;
- To conserve and protect the quality of existing residential neighborhoods and to renew or rehabilitate obsolete and deteriorating dwelling units and neighborhoods; and
- To encourage private sector development of new dwelling units compatible with existing neighborhoods.

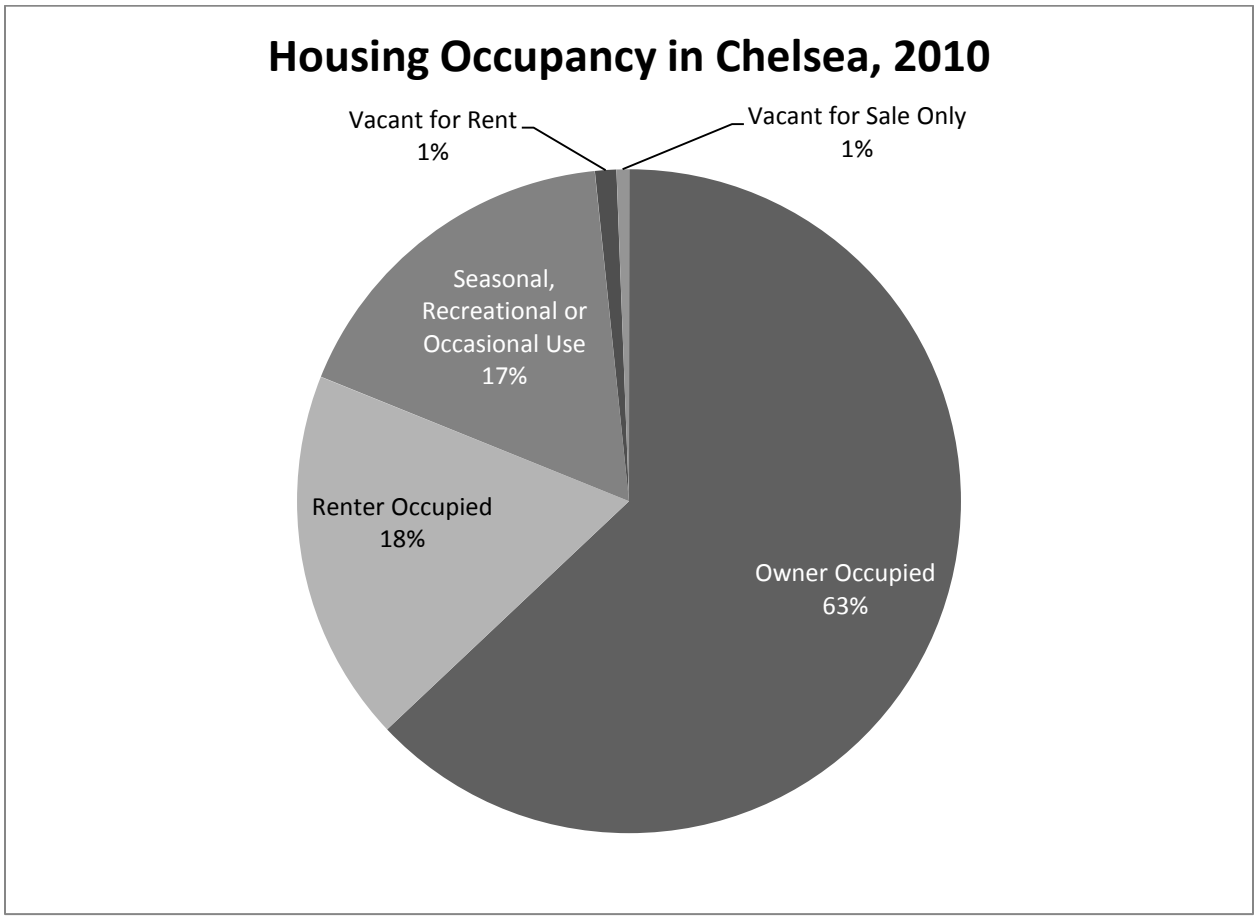
A key element in the character of the Town is its housing - the quality, availability and variety of places for its residents to live. Housing has a large influence on the rate and direction of business and industrial growth. A major function of planning for housing is to meet two important community goals:

1. Safe, adequate, and affordable shelter for present and future populations;
2. Suitable density and distribution of housing throughout the town.

Although the provision and maintenance of a town's housing stock is primarily a private sector activity, the growth and development of housing affects the environment of the town and the facilities and services it provides or will provide. Housing constructed in the absence of adequate planning for public facilities can overburden schools, sewage treatment plants, public water supplies, roads, etc. Poorly located housing can pollute a water supply or destroy an important wildlife habitat. Housing that is inadequate to meet the demand in a town or region can strain adjacent towns and prevent people from living close to their jobs or closer together.

B. Housing Profile

According to the U.S. Census, there were 695 housing units in Chelsea in 2010 (see figure 8). In 2000, there were 657 housing units. This amounted to an increase of 38 units or 5.7% over the ten year period or an average of almost four units per year. A housing unit, as defined by the U.S. Census, includes houses, apartments, mobile homes, and rooms for occupancy. The majority of Chelsea's homes are owner-occupied with only 35% either renter-occupied or used for seasonal, recreational or occasional use (second homes).



9 - Housing Occupancy in Chelsea, 2010 (Source: 2010 US Census)

As is the case for most Vermont towns, the bulk of Chelsea's housing units comprise of single-family homes (81%). The percentage of second homes (17%) in Chelsea is less than the neighboring towns of Brookfield (19%), Tunbridge (22%), Vershire (23%) and Washington (20%). Only Randolph (4%) has a

smaller percentage of second homes. When a town has a large number of homes that are not occupied year-round, it can have unforeseen impacts on town services. For example, communities which have volunteer fire department depend on full-time residents to staff its fire department and a lack of full-time residents can make acquiring staff difficult because the pool of candidates is reduced.

Rental Housing

18% of Chelsea's housing stock in 2010 were rentals, which is higher than many of the surrounding communities. With the exception of Randolph (27%), Chelsea had a higher percentage of renter-occupied units than Brookfield (12%), Tunbridge (12%), Vershire (13%) and Washington (10%). Despite this advantage, the tight housing market statewide and lack of unoccupied apartments (only 1% of Chelsea's apartments are unoccupied) continues to drive up rental costs. In 2000 the US Agency of Housing and Urban Development (HUD) calculated the fair market rent for a modest two bedroom apartment in Chelsea at $564 per month; in 2012 that cost had risen nearly 42% to $800 per month. In order for a renter in Chelsea to be able to afford rent for a two-bedroom apartment at this rate, in 2010 he/she would have needed a household income of roughly least $32,000 annually. Given that 50% of Chelsea's households filed tax returns valued at $30,000 or less in 2010, it is likely that many in the community found it difficult to afford rental housing in Chelsea.

The low percentage of homes that were unoccupied (for sale or for rent) indicate that in 2010 Chelsea was experiencing a shortage of available housing stock. Anything below 5% is functionally considered a zero. This low percentage of housing stock is very consistent from town to town throughout Vermont.

Affordable Housing

Price of Residential Homes* in Chelsea and Surrounding Area (2000 and 2011)

		2000 # Sold	2000 Average	2000 Median	2011 # Sold	2011 Average	2011 Median
Brookfield	Under 6 Acres	5	$83,700	$86,000	5	$151,400	$150,000
	6 or More Acres	5	$63,300	$40,000	2	$243,750	n/a
Chelsea	**Under 6 Acres**	**7**	**$90,500**	**$84,000**	**4**	**$124,125**	**$105,750**
	6 or More Acres	**4**	**$113,500**	**$115,000**	**4**	**$247,375**	**$282,500**
Randolph	Under 6 Acres	43	$106,415	$95,000	29	$147,689	$155,000
	6 or More Acres	17	$159,917	$150,000	11	$210,181	$170,000
Tunbridge	Under 6 Acres	4	$66,625	$68,250	6	$205,083	$203,750
	6 or More Acres	5	$201,000	$150,000	6	$261,666	$260,000
Vershire	Under 6 Acres	6	$81,733	$87,000	6	$103,166	$70,500
	6 or More Acres	5	$142,600	$93,000	3	$173,481	$174,494
Washington	Under 6 Acres	9	$80,166	$80,000	0	$0	$0
	6 or More Acres	6	$118,650	$121,500	1	$108,000	n/a

10 - Price of Residential Homes in Chelsea and Surrounding Area (Source: VT Dept. of Taxes)
***note: data does not include mobile home sales**

During the past decade housing prices have dramatically increased statewide. This is illustrated in figure 10 which compares the price of residential homes in 2000 with 2010. In 2000, the average sale price for a

primary residence (not including mobile homes) on six acres of land or less in Chelsea was $90,500; by 2010 that value had increased to 37% to $124,125. In 2010, the median price of a residential home under six acres was the lowest of surrounding communities (except Vershire), where median data could be collected.

Affordable housing is defined as that which a household making the County median income could afford if no more than 30% of its income were spent on housing costs. For homeowners, housing costs include payments for principal and interest on mortgage, taxes, etc. For renters, housing costs include rent and utilities.

Based on the data above, it appears that property values in Chelsea have increased approximately 35%. This, coupled with the mortgage crisis of 2008, has made it much more difficult for someone making an average wage to afford a home in Chelsea. The increase of property values is not unique to Chelsea, this trend is consistent with that of the State of Vermont. In its annual publication "Between a Rock and A Hard Place: Housing and Wages in Vermont", the Vermont Housing Council notes that the median purchase price of a primary home in Vermont in 2010 reached $195,000. A Vermont household would need an annual income of $58,000 as well as $16,000 in cash (for closing costs and a 5% down payment) to purchase a home at that price. It should be noted that the housing market has changed substantially over the past decade due to the national recession. While housing prices have not dropped dramatically in the last decade, income and employment opportunities have dramatically decreased, making housing even less affordable.

The cost of housing has been driven up in great part due to the tight housing market. As is noted in Figure 9 in 2000 Chelsea's vacancy rate was only 1% which is consistent with the rest of the State and, according to "Between a Rock and A Hard Place", the lowest in the nation.

Chelsea, like many communities, has experienced a trend toward fewer home occupants. This trend is unlikely to be reversed. The trend results in an increase demand for housing. The elderly, single households and other special populations are oftentimes in need of special types of housing including that which is affordable and readily accessible.

Another barrier to affordable housing is the age of homes in Chelsea. "Between a Rock and A Hard Place" points out that on the whole, "Vermont's housing stock is among the oldest in the United States. 63% of owned homes and 74% of rentals in Vermont were built in 1979 or earlier, before newer energy efficiency technology was available, housing codes were more lax and the use of lead based paint was wide-spread. These factors make an important impact on the cost of operating housing, assuring the health and safety of all residents, and providing access to Vermonters with different abilities."

Elderly Housing

Section B of Chapter 1 discussed Chelsea's trend toward an aging population. The Baby Boomers (people born between 1946 and 1964) are beginning to retire, and the oldest ones will be 84 in 2030. This shift in demographics will put added pressure on an already tight housing market. Expanding health care costs may leave seniors with even less money to spend on housing.

As the elderly (citizens aged 65 or older) become less comfortable with the tasks involved in managing their own home, they often turn to some sort of elderly housing. If health is an issue and some form of

constant care is required, seniors will need to enter a nursing home or a residential care facility. As is indicated in Figure 11, there are very few options in Chelsea or the surrounding area for this type of care. Elderly Chelsea residents in need of full-time care are forced to move away from their community. This is, of course, not just a local issue. There is a lack of elderly housing throughout the State of Vermont.

Within Vermont there are several types of elderly care facilities which are subject to State regulation, nursing homes and residential care facilities. Nursing homes provide nursing care and related services for people who need nursing, medical, rehabilitation, or other special services. They are licensed by the state and may be certified to participate in the Medicaid and/or Medicare programs. Certain nursing homes may also meet specific standards for subacute care or dementia care. Residential care homes are state licensed group living arrangements designed to meet the needs of people who cannot live independently and usually do not require the type of care provided in a nursing home. When needed, help is provided with daily activities such as eating, walking, toileting, bathing, and dressing. Residential care homes may provide nursing home level of care to residents under certain conditions. Daily rates at residential care homes are usually less than rates at nursing homes.

Nursing and Residential Care Facilities by Town , 2011			
	Nursing Care Level II	Residential Care Level III	Residential Care Level IV
Chelsea	0	21	0
Randolph	30	18	0
Tunbridge	0	0	0
Vershire	0	8	0
Washington	0	0	0

11 - Nursing and Residential Care Facilities by Town, 2011
(Source: VT Department of Independent Living)

The Vermont Department of Disabilities, Aging and Independent Living classifies residential care homes in two groups, depending upon the level of care they provide. Level III homes provide nursing overview, but not full-time nursing care. Level IV homes do not provide nursing overview or nursing care. Nursing homes, which have full time nursing care, are considered Level II. At present, Chelsea is fortunate to have a 21-bed Level III care facility located in the community. Beyond the Riverbend Residential Care Home, the nearest options are in Randolph (Number of beds: 30 Level II, 18 Level III) and Vershire (Number of beds: 0 Level II, 8 Level III, 0 Level IV). However, given the size of the populations in both Randolph and Vershire, it is likely that there is a large population waiting for vacancies at these locations.

In the Vermont Housing Finance Agency's issue paper "Housing and the Needs of Vermont's Aging Population", it is acknowledged that more seniors today want to "age in place," which means choosing to remain at home or in a supportive living community as they grow older without having to move each time their needs increase. Considering the lack of availability of nursing homes in Chelsea and Vermont as a whole, this may be the optimal way to address elderly housing in the future. Having the right housing includes the ability to stay active and engaged in community life, which is a great benefit not only to the individual, but to the community as a whole. Considering the high costs of housing in Chelsea, however, aging in place in Chelsea may not be an option that can be considered by older residents.

Several municipalities have benefited from planned retirement communities which provide for older persons. Innovative land use policies and controls to direct special needs are encouraged. Such land usages are best located in close proximity to existing hamlet centers where basic services are available and not in rural areas. As of the date of completion of this plan, Gifford Medical Center was granted an Act 250 permit for a 165 bed senior living community on a 26 acre campus in Randolph Center. If completed as planned, the campus would have independent living apartments, assisted living facilities and end of life care, all in one place. This facility, while not in Chelsea, would serve the entire Central Vermont area.

C. Goals, Policies and Recommendations

Goals

1. To continue to promote sufficient affordable primary housing for Chelsea residents by revitalizing existing housing.
2. To help Chelsea remain a well-balanced community that offers housing for all income levels.
3. To encourage innovative planning, design and construction of primary housing which minimizes the cost, energy consumption and environmental impacts of housing.

Policies

1. The distribution of and associated costs to meet the housing requirements of Vermonters are the responsibilities of all Vermonters. Thus, it is appropriate public policy that Chelsea examines its respective role for housing its citizens and encourages Vermont communities to pursue a similar approach. Chelsea should assume its relative fair share of the Region's low costs housing, but it should not in any case be unduly burdened with uneconomic costs for the provision of such housing. Instead, Chelsea shall be a well-balanced community that offers housing for all income levels.
2. The Town should allow for growth of housing for all incomes levels at a rate consistent with the community's ability to provide services in a fiscally sound manner and consistent with the other goals and policies expressed in this Plan.
3. Use of public funds in the form of subsidies may be necessary to preserve maintenance of or access to affordable housing. Where such projects involve public funds, they should only be encouraged when these investments result in developments that are affordable on a long-term basis and a clear public benefit to the community can be demonstrated.
4. Priority should be given to the preservation and improvement of affordable housing already in existence. Conversion of such housing to other uses should be discouraged unless there is a clear public benefit resulting.
5. Multiple family housing and senior housing should be encouraged to locate in areas free from flood hazards, where adequate public sewer and water services are available and access to schools and other services reasonably are afforded.
6. Conversion of larger homes to two and multiple family units to meet the needs of the community is appropriate where the historic character of a building or neighborhood is not unnecessarily destroyed or diminished.

7. The Town should direct residential growth into relatively dense settlement areas to maintain open space and preserve natural areas.

Recommendations

1. As a means of increasing affordable housing alternatives and possibly supplementing homeowner's incomes, educate homeowners on their right to develop an accessory apartment on their owner-occupied single-family residence (24 VSA §4412(E)).
2. Educate homeowners on how to make use of Central Vermont Community Land Trust's "Green Mountain Fund" loan program for housing rehabilitation in Orange County.
3. Investigate the potential to use some of the Town's revolving loan fund for home improvements.

V. Education

A. Chelsea Public School Facilities & Physical Assets

The Chelsea Public School and the Chelsea community share many ties; some even consider the K-12 school to be the heart of our rural, close-knit community. The school is viewed as a community center, a gathering place for events during all seasons, a meeting place for community-based organizations, and a central site for recreational activities. Chelsea residents have long displayed an appreciation for the unique kind of education afforded by a small school along with a willingness to support the school, both financially through taxes and donations, as well as philosophically, through volunteerism, in-kind gestures, and intense interest.

The buildings and grounds of the Chelsea Public School have changed in recent years, creating a campus-like atmosphere. Physically, the main difference is that there is no longer thru traffic permitted between the school and the gymnasium. The roadway that intersected the grounds at one time has been eliminated. The original school building is the two-story wooden building, which faces the south common. It was built in 1912 and houses grade K-5 classrooms, elementary Special Education classrooms, a foreign language classroom, and the elementary guidance office. The basement level of the building hosts the school's cafeteria and the middle and high school Special Education classroom.

The newer brick wing, which extends south of the original building, was built in 1977-1978. It connects the original school with an Industrial Arts facility (40' X 80') built in 1970. This wing houses the school library, administrative offices, the middle and high school guidance office, the school nurse's office, staff and student restrooms, as well as eight classrooms. The Industrial Arts facility has been converted into two classrooms and one workshop, as there is presently no formal Industrial Arts program. While it is disappointing to many faculty, students, and community members that a formal Industrial Arts program is no longer active, many trade skills are encouraged throughout the curriculum. A shining example of this is the middle school post and beam construction program, in which students have designed and built a number of impressive, post and beam structures The K-12 art classroom and a student lounge are also located in this section of the building. Attached to the southeast end of the building is a 13' X 16' room, constructed in 1988, which is currently used as office space.

The school gymnasium is the other main building on campus. It was built in 1951 and later expanded upon in 1984. In addition to the main gymnasium/auditorium space, the building also houses the K-12 music classroom, boys' and girls' locker rooms, restrooms, the physical education teacher's office, and a coach's room. The stage area is currently used as a classroom space. In September 2001, the wooden gym floor was sanded down and resurfaced. It is refinished annually. A heavy-duty plastic cover protects the floor during non-athletic events. The gymnasium boiler was also replaced in 2001. During the summer of 2006, the main lighting in the gymnasium was replaced with energy efficient fixtures.

A new approach to the gym was designed and constructed in 2004. A universally accessible ramp and two-tiered angled concrete stairway now form the perimeter of an outdoor courtyard between the school and gym. A roof covers a portion of the ramp, which runs parallel with the gym and the general entrance area to the gym. Sidewalks delineate paths between the two buildings and various plantings by staff and

students have significantly enhanced the entry points of the school. Teachers often host classes outdoors in this space, students enjoy lunches on picnic tables and benches, and safety is preserved with the elimination of thru traffic.

Adjacent to the gymnasium is the Roberts-Gould baseball field, which is owned by the Town of Chelsea. New dugouts, an equipment storage shed, and a concessions stand have been built in recent years to neatly house the varying functions of athletic events. The baseball field is used by the high school baseball team, as well as the senior baseball league, town team baseball league, and Babe Ruth baseball team. The school leases a field from the Brookhaven Episcopal Home for Boys, at no charge. The field is located ½ mile north of the school on Route 110 and is used for soccer and lacrosse practices and games. The school also utilizes the Heath Recreation Field south of the village on Route 110 for soccer and lacrosse.

A new playground was installed in 2007. The main structure features four slides, multiple climbing towers, monkey bars, and a climbing wall. New swings were also installed in the shade of the maple trees on the south boundary. In addition, the middle school post & beam program designed and built an open-sided pavilion building, which in intended for shaded reading, games, outdoor performances, and outdoor classroom sessions. The structure is an integral part of developing a sense of space on the school playground; it is located on the plateau overlooking the playground. Additional elements of the playground include a stand-up sandbox, a newly paved area for basketball, four-square, hopscotch, and jump roping, and a large log for climbing and exploring. Future phases of playground development focus on bringing natural elements to the playground landscape to encourage activities to stimulate students' minds and senses in non-traditional and thought-provoking ways. Potential examples include relocating the school gardens on playground space, bringing electricity and water sources to the playground, and inventing innovative ways to involve local businesses and community members in sponsoring interactive elements.

The playground project is directly tied to the reorganization of the school's rear parking lot, located at the south end of the building. The present drop-off and pick-up scenario before and after school is considered unsafe because there is no physical coordination of the space at the front or rear of the building. The bus-loading zone in the rear parking lot cannot safely coexist with staff/student parking and parents entering the parking lot to pick up students. The main parking lot for moving children in and out of school funnels down to the bridge located on Route 110, creating a serious hazard due to the poor sightline it creates. The bridge is also in serious disrepair. This bridge should be replaced by the Vermont Agency of Transportation.

Yearly Enrollment Chelsea Public School	
2010-2011	171
2009-2010	164
2008-2009	178
2007-2008	174
2006-2007	190
2005-2006	205
2004-2005	236
2003-2004	231

12 - Yearly Enrollment, 2003-2011 (Source: VT. Dept. of Education)

B. Enrollment

The Chelsea Public School has been experiencing a fairly steady pattern of decreasing enrollment over the past decade. During the 2010-2011 school year, the Chelsea Public School had 171 students, nearly 26% fewer students than attended school during the 2003-2004 school year. This breaks down into 71 elementary students (K-5), 41 middle school students (6-8),

and 59 high school students (9-12). Declining enrollments are being experienced as a state-wide trend, combined with the challenging realities of an aging building, an increasing diversity in the needs and interests of students and their families, and higher expectations for public education, are all contributing to larger conversations about how Chelsea can best educate its children while managing the costs associated with education.

Student Information			
	07-08	08-09	10-11
Attendance Rate	95.6%	95.20%	95.69%
9-12 Dropout Rate	8.7%	9.30%	5.56%
Graduation Rate	82.6%	87.50%	90.63%
Student Teacher Ratio	7.53	8.73	7.50

13 - Student Information 2007-2011 (Source VT. Dept. Education)

Declining enrollment at area schools as well as increased competition among area high schools, both public and private, has produced fewer tuition students from Chelsea's sending schools, which include Tunbridge, Washington, Corinth, and Orange. A relatively stable percentage of students continue to attend Chelsea from each sending town, but the overall number of students is down, resulting in smaller tuition numbers. In 1989, Chelsea experienced an all-time high in enrollment, serving 354 students. At this time, the school had reached its maximum capacity.

C. Ongoing Operations

The Chelsea School Board's energy has become increasingly focused on fostering a stimulating, cooperative, and nurturing culture within the school, operating on the belief that in a school with a positive self-image and a commitment to academic rigor and community-minded relationships, opportunities to enrich student experiences will be abundant, yet individual. Conversations within the community and within the school have begun to center around a proactive approach to celebrating our small K-12 school in unique ways to not only remind ourselves why we might support its continuation, but also to serve as indirect positive publicity for the kind of education we can offer in a broadening world.

As the Chelsea community prepares for the future, conversations that have been postponed in the past about the town's ability to maintain its K-12 school are increasing in momentum and necessity.

The school board is actively engaging in discussion with the school faculty, students, parents, and the community about what we, in the Chelsea community, value in our small school. Threads from these discussions will inform our searches for leadership as well as our path toward an inherently local form of education, an extended possibility of consolidation, or some combination thereof. The school board passionately encourages and appreciates input from the school community.

D. Other Educational Facilities

Brookhaven Treatment and Learning Center

Brookhaven is located on 170 acres in Chelsea with the buildings being located on the north end of Main St. The land includes a large playing field, swimming brook, hiking trails, garden and other recreational fields as well as our new pavilion over the basketball court. The Brookhaven Board of Directors oversees the programs.

Brookhaven has three Programs:

- Residential Program - The residential program provides individualized educational, residential, and clinical services to male youths ages 6-13 who have experienced abuse and neglect and present with significant emotional and behavioral challenges. Brookhaven is committed to providing youths with a therapeutic environment that promotes safety, structure, and the opportunity to heal and transition back into the community and family.
- Brookhaven Learning Center / Dr. Brewster D. Martin Learning Center - The Brookhaven Learning Center is an independent school with a therapeutic and family based educational curriculum for residential and day students. Teachers utilize diverse teaching methods to present our curriculum and meet the goals of each child's Individual Education Plan (IEP). Teachers are trained to consider the emotional state of each student and to tailor educational expectations and teaching strategies to each child's level of functioning. Brookhaven is licensed to accept 14 day students in grades K-8.
- Camp Haven - Camp Haven is The Brookhaven Learning Center's extended year program. Camp runs for six weeks during the summer. Over the six-week camp, the teachers and clinical staff strive to create a host of activities to teach academic and therapeutic concepts. The Camp Haven program features a structured behavior modification system and a therapeutic cooperative environment. The Brookhaven staff provides support to build academic achievement and self-esteem in children with a history of failure and conflict at school.

E. Childcare

An inventory of registered childcare facilities reveals that Chelsea has a limited amount of childcare available to the community. The State of Vermont has two classifications of childcare that are regulated, they are:

- **Registered Family Child Care Home**: A child care program approved only in the provider's residence, which is limited to a small number of children based on specific criteria.

- **Licensed Program**: A child care program providing

Childcare, 2012
Childcare by provider, by town

	licensed	registered
Brookfield	0	1
Chelsea	2	1
Tunbridge	2	0
Vershire	0	1
Washington	0	2

Figure 14: Childcare by provider, by town, 2011 (Source: VT Bright Futures)

care to children in any approved location. The number and ages of children served are based on available approved space and staffing qualifications, as well as play and learning equipment. A Licensed program must be inspected by the Department of Labor and Industry's Fire Safety Inspectors and must obtain a Water and Wastewater Disposal Permit from the Agency of Environmental Conservation. A Licensed program is considered a public building under Vermont Law. Types of licensed programs include: early childhood programs, school-age care, family homes and non-recurring care programs.

There are two licensed and one registered childcare services in Chelsea. Most residents currently arrange for care with relatives, or take their children to childcare facilities beyond the borders of Chelsea to neighboring towns or to locations close to where they work.

F. Adult Education

Chelsea has a fairly limited amount of adult education opportunities. Most adults take advantage of the opportunities that are available in Randolph as an alternative. These include:

- Vermont Technical College (VTC) - Vermont Technical College is located in Randolph Center. VTC is part of the Vermont State College system and offers full and part time educational opportunities that range from computer technology, to agriculture to health services. Attendees may choose a two-year program that leads to an associate's degree, a four-year program that leads to a bachelor's degree, or the college's one-year program that leads to a Practical Nursing certificate.
- Randolph Technical Career Center (RTCC) – Located in Randolph village, the RTCC is part of Randolph Union High School. RTCC offers adult education courses that range from the traditional tech center focuses of mechanical and woodworking, to computer technology, small business management, bookkeeping as well as arts, crafts and languages. RTCC's adult education classes are open to all for a fee.

G. Goals, Policies and Recommendations

Goals

1. To provide a safe and secure learning environment where quality educational opportunities are provided to all students.

2. To enable the best opportunity to educate our students at the most equitable cost to the Town's taxpayers.

3. To encourage the creation of affordable childcare facilities that meet the established needs of residents in Chelsea.

Policies

1. It is the policy of the Town to provide sufficient and appropriate physical space to meet current and projected enrollments.

2. To encourage and support the creation of additional childcare facilities that meet the diverse requirements of the working population.

3. To support the creation of licensed childcare facilities that are run from the home as home occupations.

Recommendations

1. The School board should continue to explore ways to increase the diversity of the school curriculum and provide a mechanism to support new programs.

VI. Utilities and Facilities

The provision of services and maintenance of facilities is one of the key roles of any municipal government. The cost of services and public facility maintenance can represent a substantial amount of a municipality's yearly budget (not including transportation, which is generally the largest portion).

A. Capital Budgeting & Planning

State statute enables communities to create a Capital Budget and Program for the purposes of planning and investing in long-range capital planning. Although most communities have some form of capital account where they save money, many do not have a true Capital Budget and Program. A capital budge outlines the capital projects that are to be undertaken in the coming fiscal years over a five-year period. It includes estimated costs and a proposed method of financing those costs. Also outlined in the Program is an indication of priority of need and the order in which these investments will be made. Any Capital Budget and Program must be consistent with the Town Plan and shall include an analysis of what effect capital investments might have on the operating costs of the community.

When planning for routine major facilities investments, such as roof replacements, foundation repairs, etc., it is important to also consider making energy efficiency improvements at the same time. The cost to replace or renovate a community facility will only be slightly higher if energy efficiency improvements are done at the same time, rather than on their own.

At present, the town of Chelsea does not have an adopted Capital Budget and Program to help guide investments in community infrastructure and equipment. The Planning Commission may make recommendations to the Selectboard with regard to what capital investments should be considered annually.

Recommendations

1. The Planning Commission, with assistance from the Selectboard, should create a Capital Budget and Program to guide future investments in infrastructure.

2. The Selectboard should conduct energy audits on all town buildings and use data collected in capital budgeting for future improvements.

B. Municipal Buildings

Chelsea Town Hall

Chelsea's Town Hall was built in 1894. At the time the building contained a public library, as it does today, but not the Town office (in those days Town Clerks generally worked out of their own houses). In approximately the 1940's an office and vault were fitted into the left front circular corner of the building,

opposite the library. As it was still customary for the Town Clerk and Treasurer positions to be held by the same person, this space was adequate until the mid-1990's when the workload of each position had expanded enough so that the Town was forced to split the two positions. At that point, the space was accommodating the Town Clerk, Treasurer, and 3 listers and a part time Zoning Administrator - an impossible situation. In 1998 a separate space was rented for the Treasurer's office.

The office and vault space in the Town Hall totals 244 square feet and is shared by the Town Clerk and 3 listers. The two-room Treasurer's office across the street consists of approximately 120 square feet of office space and 100 square feet of storage. This office is shared by the Treasurer and the auditors; the Selectboard also holds its meetings there. The Planning Commission meets in either the Library or at the Chelsea School, as do other Town committees generally.

The space in both facilities is inadequate. The Town Clerk and Listers office is especially cramped. When the Listers are working, it is very difficult for the Clerk to conduct business with the public. Storage has reached a point of crisis. The under counter shelves are completely filled, while the shelves of the vault are full to overflowing.

The Treasurer's office is somewhat less crowded with regard to working space, but storage is problematic. The Treasurer's office is inadequate as a space for Selectboard meetings; when attendance is large, there is no room for the public.

A Town Office under one roof, designed with current and future needs in mind, would be ideal. Work spaces for the various officers need to be larger and better linked together. There should be access to a conference table as well as a space for public meetings. Better located and equipped computer stations would make work more efficient. Adequate storage space is critical, and should be located where it can be easily accessed by all Town officers.

The possibility of a new building has been considered in Chelsea since the 1990's, but the cost and availability of suitable land has been a challenge. To date, no exact costs for a new building have been determined.

The Town Hall itself has seen substantial improvements, most of which focused on weatherization. The Chelsea Town Hall weatherization project was initiated by the Chelsea Energy Committee in 2008. The Hall was chosen because of its prominence in town and the cost of energy to operate it. Early work was provided on a volunteer basis and supported by donations along with some contracted work. This first phase covered blocking obvious air leaks, insulating where easily done, installing programmable thermostats and weather stripping doors.

In March of 2009 Town of Chelsea conducted a full energy audit on the Chelsea Town Hall. The audit focused on heating and energy loss. The result of the audit determined that there were a number of areas of the Town Hall building that were deficient in insulation, as well as identifying many other sources of heat loss and inefficiency. The audit recommended specific areas that would benefit from insulation (including attic, wall and foundation areas), external storm windows and efficient lighting.

The Energy Committee worked to secure grant funding to implement the following recommendations from the Town Hall Audit:

- Purchase and install 17 storm windows in the Hall
- Replace weather stripping on all operating windows.
- Air seal for heat loss (which reduced air loss by 20% in the Hall)
- Increase insulation in attic spaces to increase R-values up to R-60
- Insulate front wall of Foyer (previously un-insulated)
- Insulate basement walls with rigid foam insulation to an R-14 value
- Spray on fire barrier to all open foam in basement
- Re-ducted the four furnaces in the hall to increase their efficiency and efficacy.

The Energy Committee estimates the savings in heating cost to be over 40%. There are no other capital improvements planned for the Town hall at this time.

Goal

1. Develop more Town Office space that is efficient and welcoming.

Policies

1. Actions should consider all town facility needs and assets for coordination and development.

2. Town Offices should be kept in the village.

3. The historic town hall exterior should be preserved.

Recommendations

1. Engage in a capital budget plan to assess the scope of office possibilities. Investigate short term design and storage solutions.

2. Use Facilities Committee report dated February, 2007 as a launching point to continue to explore needs and solutions.

Chelsea Town Garage

Background

The current Town Highway Garage is located on a lot in the center of the Village south of the Chelsea Country Store. The lot runs from VT RT 110 back to the River behind the building. The area in front of the Garage is used for public parking. The building is a 1600 square foot metal building on a badly broken concrete slab. The building was constructed in the 1930's. For many years the building was used only for cold storage until the town changed from contracting equipment from the Road Commissioner to having a Road Foreman and owning equipment of its own. Recent renovations have been made to the building to

improve insulation, replace doors and add a small office space and bathroom to make the building useable until a new facility is constructed.

Current Space and Situation

The building is viewed by the Town to be substandard in all regards, and replacement has been identified by both the Town Facilities Committee and Select Board as a Priority for the Town. The current space only accommodates 3 of the 8 pieces of Equipment owned by the Town with the balance being stored outside at two separate sites. The building is grossly energy inefficient resulting in operating cost that is extremely high for a building of this size. The badly broken concrete floor makes maintenance of equipment and clean up very difficult. Safety issues are a major concern with the Town's water supply directly behind the building and with equipment traffic in a very busy pedestrian and parking area in front of the garage. Additionally, the Town Garage is located within the floodplain. If the location was inundated during a severe flooding event, it could represent a loss of materials and equipment that would cost Chelsea's taxpayers a substantial amount of money.

Currently there is a significant amount of effort to settle on a new site that will accommodate the town's road equipment, the garage and the sand pile. Designs for the garage have been drafted but attempts to reach a consensus on a suitable location have been unsuccessful. Although the town does not have specific costs estimated to purchase property and build a new Town Garage, it does have a Garage Fund established. With timber sales from the Town Forest added to the Garage Fund, the town has about $278,500 that could be used to support this project.

Goal

1. To provide a safe and efficient location for Chelsea's road crew and equipment that does not impose an undue burden on taxpayers.

Policy

1. To continue to examine options for the location and construction of a new Town Garage.

2. To locate municipal buildings outside of the mapped FEMA Floodplain.

C. Cemeteries

Chelsea has eight town maintained cemeteries. These cemeteries are managed by five commissioners elected at town meeting. These commissioners oversee the maintenance and burials in these cemeteries. There is adequate space available in the town maintained cemeteries.

D. Public Library

"The Chelsea Town Hall and Public Library was built in 1894 with a gift of $5,000.00 from Alden Speare and a matching $5,000.00 from the Town. One hundred and nineteen years later, it continues to operate in the same location.

The Library currently houses over 10,000 items that includes books, DVDs and audio materials. Our staff consists of both a part-time librarian and a part-time assistant librarian, along with a core group of dedicated volunteers. Annual circulation and patron visits have continued to increase since the last town planning report in 2000. For the year ending 2012, circulation was 20,000 and there were 7,849 patron visits. Circulation increased almost 50% from the year 2011, and patron visits also increased. The library is open 23 hours per week throughout the year on Mondays, Wednesdays, Fridays, and Saturdays.

Some major improvements from the past year include the upgrade to a new computer system, Koha in November, an open source computer system that enables Chelsea Library patrons to check their Library accounts at home 24 hours a day, 7 days a week. As part of making the switch over, patrons received a physical library card for the first time. In another tech improvement, eReaders were added to the circulating collection. The library also has its very own website up and running that can be found at www.chelsealibrary.com. Lastly thanks to the Byrne Foundation, the library was able to purchase three patron computers and two staff computers. Six local and regional artists exhibited in 2012; several have regional and national reputations. This art program will continue in 2013 with high quality exhibits of paintings, sculpture and photographs presented every 2 months.

The Trustees of the Chelsea Public Library continue to recognize the need for additional space for books, as well as the growing video and audio collection, work and storage space for the librarian and a need to accommodate additional computers. The Library is currently in the process of developing its own strategic plan which will give it some concrete goals as it heads into the future. As part of the plan, the committee involved will explore options relating to its current space and see how it can be improved either in its current location or another location in town.

E. Public Lands

The town of Chelsea owns five parcels. They include:

- Two town forests (20 and 330 acres respectively) in the southeastern corner of town. The Town Forest is maintained through a local forestry management plan and the proceeds from timber sales are used to fund town projects.
- The Heath Field south of the village.
- The parcel on Baraw Hill rd. where the municipal water storage tank is located.
- The parcel on Pepper rd. where the Chelsea Transfer station is located.

F. Public Sewer Systems

The Chelsea Village operates a sewage treatment plant to which 269 village properties are connected. The system was constructed in 1974 with a Federal grant and financing by a municipal bond. Operating costs are covered by an assessment of the users.

All other town residents rely on approved on-site treatment systems. The current Zoning Bylaw requires that sewage disposal be by connection to the municipal system or an approved on-site wastewater disposal system. The Water and Sewer System Ordinance (adopted August 6, 2002) requires that any buildings used for human occupancy that are located within 200 feet of a municipal sewer line must use the municipal system and cannot process wastewater with a private onsite disposal system (Article V, Section 1).

The municipal sewer system was designed to process a maximum of 55,000 gallons per day (gpd). At the present time, the system is treating 28,000 gpd, using 51% of the system's capacity. The Vermont Agency of Natural Resources requires future planning for systems that operate at-or-above 80% of design capacity. An additional 76 housing units could be connected to the system before reaching the 80% threshold in Chelsea - there is a presently unused capacity of 16,000 gpd and each housing unit produces 210 gallons of waste. Stormwater creates high flows of wastewater which indicates that illegal connections to the sewer system (such as by floor drains and sump pumps) still exists in the community. A second clarifier was installed on the system in 2007. Seventy-five percent of the cost of the clarifier was funded by a grant from the U.S. Department of Agriculture's Rural Development Program; the other 25% was paid for by the Town. The new clarifier eliminates the threat of river contamination in the event of system failure by providing a back-up to the original clarifier. There is no plan to extend the system to serve more rural areas.

The Chelsea Sewage Treatment facility is located within the Flood Hazard Area. In the event of an extreme flooding event, it is likely that the facility would be inundated and the equipment would be damaged. In addition, inundation of the facility could lead to contamination due to effluent release. The cost to move the Chelsea Sewage Treatment Plant is prohibitive, but if grant opportunities that would cover the majority of the expense presented themselves, moving the facility would be worth considering.

Recommendations

1. The property on which the sewage treatment plant is located should remain free of additional development to allow for future system replacement.

G. Public Water Systems

In 1991, the Town undertook the effort to upgrade the antiquated public water system by essentially replacing it. Supported by a combination of Federal grant and bond financing, a contract was let for a new system. Construction was begun in the spring of 1995 and completed by year-end. Meters were installed for each user. Fire hydrants were also installed thus improving fire protection for the village.

The specifications included:

- Rate of Flow - 27,000 gallons per day
- Storage Tank Capacity - 244,000 gallons
- Main Line Capacity - 90,000 gallons

The system's daily use is ~23,000gal/day. Currently there are 219 users, with some residents opting to continue using their own wells or springs instead of hooking up. When fully operational with adequate well water supply, the system should have about 25% of excess capacity, enough to support expected growth in the area served for the foreseeable future.

The Selectboard does not foresee any immediate needs for further improvements. Long-term needs do include, however, securing additional water supplies to the system.

Chelsea has three wells:

- The Kennedy Well - 14 gal/min.
- The Village Well - 20gal/min
- Brookhaven Well 50+/ min.

The Town regulates development within the aquifer recharge areas that serve these wells.

Policies

1. In order to prevent contamination of this vital resource, it is critically important that all Town and other public wells be protected from pollution.

2. Should it be determined that the system can withstand a sizable increase in use, any large expansion of this system should be paid for by the parties benefiting from the expansion.

Recommendations

1. The Selectboard should identify future sites for wells for the Town Water System and identify strategies needed to protect these sites..

H. Communication Facilities

Telephone

Landline Communications - Most of the telephone related services in Chelsea are still offered via the traditional telephone lines and poles (landline). Coverage over landlines in Chelsea is provided exclusively by Fairpoint Communications, Inc.

Internet

Internet - There are presently five ways to access the internet in Chelsea, they are: landline, DSL, cable, satellite and cellular internet.

Dial-up - Dial-up access is the most commonly available service to residents, but speeds over a telephone modem are very slow, and given the ever increasing need for bandwidth in day-to-day use of the internet, it is not practical for more than checking email. The faster and more stable options available to some residents are via cable, satellite, DSL and cellular services.

Cable Internet – Charter offers internet through their existing cable TV system. Speeds are generally considered good for home users, and businesses can acquire higher speeds through business specific packages. Home cable internet can be subject to slow-downs at peak hours when many users are accessing the internet at the same time. Cable is most commonly available in the village area and along more populated roads. Coverage beyond the village is limited.

DSL (Digital Subscriber Line) - DSL is very similar to cable in speed. It is less subject to decreases in speed caused by heavy internet traffic because a certain amount of bandwidth is dedicated for each user. DSL is provided to those within the service area of Fairpoint Communications, but only within three line miles of the Fairpoint switching station. As a result, it is most commonly available in the village area and along more populated roads. Coverage beyond the village is limited.

Satellite Internet - Provided by companies such as Dish Network, Hughsnet and Wildblue, satellite internet is an option for residents who are unable to access the internet via cable or DSL provided they have a clear view of the southern sky from their location. Although bandwidth over satellite is on average three times faster than a dial-up connection, it is more expensive than other methods of access and it can be affected by heavy weather such as torrential rains and blizzards.

Cellular Internet – With the growing amount of bandwidth available to smartphone users via cellular phone networks, cellular providers are offering the ability to utilize their network for internet access. The nature of cellular connections is such that they are less susceptible to disruption from weather conditions as is the case with satellite internet. However, a clear and strong connection to a cellular tower is required in order to utilize this service. The State of Vermont has put a substantial amount of support behind the notion of providing internet access via this medium to those areas that are currently underserved.

It is likely that as many as two-thirds of the households in Chelsea have access to the internet only via landline or satellite modem. Because of the difficulties in convincing cable and DSL providers to extend their coverage areas, other towns have considered alternatives to those listed above. In some cases, wireless internet providers have placed towers in towns that provide wireless broadband access to those within line-of-sight.

Fiber-to-the-Home - In the past three years, East Central Vermont Community Fiber (EC Fiber) Network has approached towns in the Upper Valley and surrounding areas including Chelsea. This organization has developed a long-term plan to extend fiber optic cable throughout the region. Fiber optic cables offer the fastest connection speed available. When asked to become an active participant in the EC Fiber project, the Town of Chelsea opted to join. EC Fiber has announced plans to extend service to Vershire,

which would require passing through Chelsea via Routes 100 and 113, thus providing Chelsea with access to the fiber optic system.

Cellular Communications

There are no cell towers located in Chelsea, and coverage is poor at best. Chelsea has a cell tower ordinance that guides the design of any towers that might be developed; however, any cellular provider who is creating a network of cell towers is exempt from local land use regulations under V.S.A Title 30, Chapter 5, §248a. While these facilities are exempt from local regulations, due consideration to the municipal plan is supposed to occur as part of the permitting process.

Any cell tower that is proposed for development in Chelsea must be designed so as to not have an undo impact on the rural character of the area in which it is located, this may be achieved by some of the following concepts:

- siting the tower below the ridgeline
- using stealth design to have it blend in with surrounding trees
- altering the color of the tower to reduce visibility
- use of landscaping to effectively screen the view of the equipment shelters, necessary structures or access roads from adjacent public ways, public property and residential property

Towers must be capable of supporting multiple antennae/cell service suppliers in order to maximize coverage.

Goals

1. Continue to keep the telecommunications element of the Chelsea Zoning Bylaw relevant and up-to-date with current technologies.

2. Facilitate the provision of telecommunications services to the residents and businesses of Chelsea.

3. Direct the location and design of towers to keep them out of sensitive areas, including schools, historic and highly scenic areas, as well as protect environment and natural resources, through the Chelsea Zoning Bylaw.

4. To enable new economic opportunities through the use of wireless telecommunications or Fiber-to-the-Home technology.

5. To make high-speed internet access available to most areas in Chelsea.

6. To support the enhancement of the broadband internet network when such facilities do not have significant adverse environmental, health, or aesthetic impacts.

Policies

1. Actively participate in the Section 248 review process on wireless telecommunications facilities proposed for Chelsea and the surrounding area.

2. To actively participate in the East Central Vermont Fiber (EC Fiber) project.

3. To support the State of Vermont in its maintenance of a Statewide Telecommunications Plan.

4. To support the development of a broadband network when such facilities do not have significant adverse environmental, health, or aesthetic impacts.

Recommendations

1. The Town of Chelsea should participate in efforts to bring a last-mile fiber network to residents.

2. The Town of Chelsea should facilitate the development of cell phone towers to enhance coverage in the village.

3. The Planning Commission should conduct a poll of the community to determine where the most appropriate locations for cell phone towers would be in Chelsea.

I. Solid Waste Management

Chelsea is a part of the Central Vermont Solid Waste Management District with 17 other Towns and Villages. The solid waste district is responsible for maintaining the Solid Waste Implementation Plans that all communities must have, as well as offering various solid waste programs such as household hazardous waste pickups and recycling programs.

The Town of Chelsea operates the Chelsea Transfer Station without assistance from the solid waste district.

J. Goals, Policies and Recommendations

Goal

1. To provide public services and public facilities that meet the needs of the community while not creating an undue burden on taxpayers.

Polices

1. To provide residents with safe, effective, responsive and affordable municipal infrastructure, facilities and services consistent with other town goals and whenever possible, to encourage and work with other public and private utility or service providers to do the same.
2. To locate municipal facilities in areas that are outside of the mapped FEMA Flood Hazard Area.

VII. Recreation and Parks

A. Recreation Committee

The Chelsea Recreation committee exists to encourage and support recreation for all ages in the Chelsea community. This organization was formed in 1994 and took on the task in of establishing and maintaining the Heath Recreation Area. Fund raising for over 10 years has created a perpetual care fund established to ensure the maintenance of these fields.

The Chelsea Recreation committee supports summer and winter basketball camps as well as lacrosse and a one week soccer camp. Other activities too numerous to mention have been supported by CRC as the season or people demand.

B. Indoor Facilities

The Town Hall auditorium houses a full-sized proscenium stage and balcony with limited back stage space. The main floor is often used for dances and private parties.

The Chelsea School Gym is used primarily by the school, but is also heavily used in off hours by town recreational teams and informal sport activities and performances.

C. Outdoor Facilities

Outdoor recreational activities are popular in Chelsea. There are a number of public and private outdoor recreation options within or adjacent to the Village.

- **The Robert Gould field -** a baseball field located at the school grounds.
- **The Brookhaven field -** used for softball, lacrosse and soccer by the school and recreational users. This field is owned by the Brookhaven Home for Boys and rented by the school; a longer lease would be desirable.
- **The Heath Field** that serves the town Little League is located south of the village beside the sewage treatment plant. In 1999, this was expanded into two fields with limited room for parking and public picnic area. A volleyball court was added in 2001. During the winter, ice skating is available. There is also a shelter for picnics and gatherings as well as playground equipment.
- **Horseshoe pits**, also located by the sewage treatment plant, are used frequently.
- **The Atwood lot -** directly across from the bank in the village center has an outdoor asphalt basketball court, a swing set and other playground equipment for young children. During 1996, through community efforts, the playground was significantly improved.

- **School Playground -** located on the south end of the school grounds has a slide, swings and various climbing structures which were upgraded in 2007.

D. Other Recreational Areas

The Commons

The two Village Commons are important public space used for a variety of activities from picnicking and Frisbee throwing to the weekly summer farmers market and the annual flea market. The Park Commission has made the commons more users friendly with benches and trash barrels.

The Town Forest

The Town owns 2 parcels of forest land in the south east corner of town. One parcel is approximately 20 acres and the other approximately 330 acres. Currently little recreation use is made of these parcels except for an occasional skier in the winter.

Swimming

At present, the Town has no public swimming facilities. Private ponds, nearby lakes and the First Branch are currently the only available areas for swimming.

Fishing

Fishing on the First Branch of the White River and its tributaries is a popular activity for residents and visitors alike. There are a number of parking places along Route 110 that provide access to the First Branch. The First Branch is a public water way along the highway and, therefore, available for public use at the points where the highway borders the water. On other river sections, the landowner determines fishing access. The Fish and game club sponsor’s a yearly fishing derby for kids each year.

Sections of the river have been specifically reserved for Chelsea's young people including:

A Children's Brook for children under 13 has been designated from the Bobbin Shop bridge to the Brookhaven Dam;

There is also a fishing access south of the village on the First Branch of the White River, which is owned by the State of Vermont (approx. 1 acre).

Hunting

Many local visiting sportsmen hunt within the Town's boundaries, deer and grouse being the most sought game. At this point, access to open, non-forested land for hunting is a concern. Nevertheless, as land has become divided into smaller parcels for residential development, increasingly gets posted, and houses and camps press into the back woodland, availability of land for hunting and other recreational use has been jeopardized. In more populated Vermont communities, this scenario has proven to be the case. The Chelsea Fish and Game Club own 155 acres on the East Randolph Road where there is a rifle range which doubles as a great sliding hill in the winter. The Club completed a new clubhouse in 2001.

Trails

A large network of Town trails and old roads provides access to most of the Town's backcountry. Designated trails are open to snowmobilers and are open as well to hikers, skiers, and horse riders. Trails are also used by ATVs and their use is encouraged provided that they are used responsibly. Excessive rutting and washing by four-wheel drive vehicles is a problem in some cases.

Chelsea residents also enjoy snowmobiling, which utilizes public trails as well as private trails which are maintained by the Vermont Association of Snow Travelers (VAST).

E. Goals, Policies and Recommendations

Goal

To ensure that the patterns of land use in Chelsea continue to allow for recreational opportunities for all.

Policy

It is Town policy not to abandon Class 4 roads and trails if they have recreational and/or historical value.

Recommendations

1. Because the school gym is heavily booked in the winter months, expansion of recreational activities might occur in the Town Hall if supervision is provided and costs are covered.

2. That any State highway improvements to Routes 110 and 113 include a wider shoulder to better accommodate pedestrians and cyclists.

3. A recent survey done by the Parks and Recreation Committees revealed a desire on the part of many for walking trails, for bicycle trails and for X-country ski trails. These should be part of a

long-range plan for the community.

4. Install a sign to identify public fishing access on Route 110.

VIII. Health and Emergency Services

A. Health Care Facilities

Health care facilities are essential in the prevention, treatment, and management of illness, and in the preservation of mental and physical well-being through the services that they offer. Rural locations such as Chelsea are served by small facilities that can assist residents with general health care needs but are not suited for more complex acute care services that require specialized services and equipment.

The lower population density of Vermont's rural countryside and the larger the area over which the population is distributed can make providing adequate health care more difficult, particularly for the elderly who may not be able to drive themselves to major health care facilities. Likewise in rural areas, emergency care for severe trauma or major acute illnesses such as stroke and heart attack may take longer to arrive than in more populated locations, risking potential loss of life.

Chelsea is fortunate to have the Chelsea Health Center. The Chelsea Health Center provides primary health care, including family and internal (adult) medicine, in a convenient main street location to the people of Chelsea and the surrounding area. Physicians cover the Health Center on a rotating basis as a secondary office and have privileges at Gifford Memorial Hospital in Randolph, Vermont. Gifford Medical Center offers a wide range of services to serve most medical needs. In addition to Gifford, there are several smaller health centers in Randolph. There are large-scale community hospitals in Rutland and Berlin, and a tertiary care facility in Lebanon, NH.

B. Fire Protection Services

Fire District Number One is an all-volunteer organization that provides fire protection for the Town. The Fire Station is located near the center of Chelsea Village on Rt. 110. It is fully insulated wood-frame structure of 44 by 140 feet with 5 bays, set back 30 ft. from the street. All the fire-fighting apparatus is housed within this building along with rented space used by First Branch Ambulance. The communication system consists of a two-way radio system hooked up with Rockingham Barracks State Police that is being upgraded to allow direct communication with mutual aid departments.

The Fire District has an agreement with the Town of Washington to respond to calls south of the height of land and has a mutual assistance agreement with the Tunbridge Fire District, Sharon Fire Department and Vershire Fire Department. Further, the District is a member of the Capital Fire Mutual Aid System.

The department has 21 volunteers. There is always a need for additional volunteers to serve as firefighters, to help raise money, and to help care for the equipment. Recruiting new members can be a challenge, a common problem statewide. Changes in Chelsea’s demographics; the effect of living in a community where most residents work outside of town, and the many State and Federal requirements for training have negatively impacted the TVFD’s pool of interested volunteers. In particular, day coverage is spotty because many residents work out of town.

The Fire Department has access to six dry hydrants located throughout the village to provide water access in areas where water is not readily available. An additional five are desired. The Fire Department hopes to add additional hydrants when residents construct ponds on their property.

C. Police Services

The Orange County Sheriff, Chief Deputy Sheriff and an Administrative Manager provide police services for Chelsea and 16 other towns. The Orange County Sheriff's Office and adjacent facility are located in Chelsea Village on Route 113 (Jail Street). The police facility consists of a set of four rooms for the office, a block of six cells to accommodate 12 detainees on the ground floor. Detention is limited to 72 hours or to weekend prisoners. A Duty clerk is on duty at this location 24 hours a day to accept calls and dispatch a Deputy if one is available.

Since State Law does not provide for the County to tax residents for law enforcement expenses, including salaries and equipment, the Sheriff's Department operates under contract to towns desiring their patrolling and response services. Currently, eleven towns including Chelsea are among billed at the rate of $25 per hour. In addition, the Department contracts for traffic control during road paving, utility construction and other projects at a higher rate. The Sheriff's Department also applies for grants, such as DUI, Safe Highway (Speed Enforcement), Click It Or Ticket, Start (Underage Drinking) and Community Drug Interdiction Program. These grants help provide a higher presence of the Orange County Sheriff's Department throughout the County at no cost to the Tax payer.

D. Emergency Medical Services

First Branch Ambulance

Chelsea utilizes First Branch Ambulance for emergency medical services. First Branch Ambulance (FBA), is a not for profit emergency ambulance and rescue service composed of paid full-time, part-time and volunteer staff. Emergency medical service is provided to a geographical area which includes the towns of Chelsea and Tunbridge. The Town of Chelsea pays FBA for its services. It should be noted that those who use the ambulance will be charged for FBA's service on an individual basis in addition to the fees paid by the town.

Dartmouth-Hitchcock Advanced Response Team (DHART)

The Dartmouth-Hitchcock Advanced Response Team is based in Lebanon, NH at Dartmouth-Hitchcock Medical Center. DHART crews provide air medical transportation services to the medical communities of Northern New England. In addition, DHART flight crews respond to public safety agency requests for medical evacuation of trauma patients from scenes of injury, and will transport to the closest Trauma

Center in the region's five states. Operating 24 hours a day and seven days a week, DHART Crews transport adult, pediatric and neonatal patients to ANY appropriate medical facility in New England.

E. Emergency Management Planning

The impact of expected, but unpredictable natural and human-caused events to the region can be reduced through proper emergency management. Emergency management is generally broken down into four areas: preparedness, response, recovery and mitigation.

- Preparedness includes emergency personnel acquiring suitable equipment, and conducting 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.
- Response is the initial emergency response to save life and property during and immediately after the disaster, and is initiated by local emergency crews and then followed up by outside forces if necessary. 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 or federal agencies. Practicing with all of these partners before an actual emergency is critical to smooth emergency operations.
- Recovery is the more long-term process of putting life back to normal, and includes many state and federal agencies, especially the Federal Emergency Management Agency (FEMA) in large disasters. As events like Tropical Storm Irene showed, recovery can take a long time and is hindered if a disaster is severe or widespread. Recovery also involves much less state and federal assistance than is commonly thought, and requires a substantial coordination effort at the municipal level, so the best strategy is to avoid disaster-prone behavior in the first place.
- Hazard mitigation means 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 the effects of these hazards. Given that the largest threat in Vermont is flood related, good mitigation measures include proper road and drainage construction, as well as limiting development in flood prone areas.

Planning for emergencies is essential at the municipal level and should focus on all four of the areas outlined above.

Basic Emergency Operations Plan

Chelsea, like every town in Vermont, is supposed to have a Basic Emergency Operations Plan (BEOP). This plan supplies a list of contacts to use during an emergency as well as information on shelters, vulnerable sites and which town officials might play which roles during a disaster. It is not typically a public document as it has private numbers in it, but the people expected to use it should have hard copies.

The Selectboard should continue to keep the BEOP up-to-date and ensure that all parts of municipal government that are active during a hazard event are aware of what is in it. This includes the Selectboard, Fire and Rescue, Road Crew and Shelter coordinators.

Hazard Mitigation Plan

Disaster mitigation covers actions done to reduce the effects of a disaster. For our Chelsea, the primary hazard is flooding, with a variety of other lesser hazards. All hazards have been reviewed in the town's Mitigation Plan. There are many ways that the town can reduce damages, and since a disaster does not always result in state or federal assistance, the town should take sensible steps that can reduce disaster costs, damage to property and loss of life.

Emergency Access

Any new property development in Chelsea should be designed so as to allow safe access for emergency services. Poorly designed driveways that are too steep or too narrow can limit access, particularly in the winter, and may represent a safety hazard for the emergency responder.

F. Goals, Policies and Recommendations

Goals

1. High quality medical care should be available to all Chelsea residents.

2. To ensure the protection and safety of the citizens of Chelsea against crime and violations of law.

3. To maintain appropriate fire and ambulance service.

Polices

1. It is the policy of the town to support and encourage the development of local health care facilities and counseling services to help residents obtain health care as close to home as possible.

2. It is the policy of the town to support programs that expand medical coverage or improve medical services for Chelsea residents.

3. It is the policy of the town to support the development of assisted living or other facilities or services dedicated to supporting the elderly in Chelsea.

4. It is the policy of the town to support efforts to provide residents with access to high quality physical and mental health care through local providers.

5. It is the policy of the town to support efforts to decrease response times for emergency services.

6. It is the policy of the town that the law enforcement needs of the town and its citizens be reviewed and assessed on an annual basis by town officials with input from the citizens to determine the adequacy of police protection provided and to provide greater protection if determined to be inadequate.

7. It is the policy of the town to maintain its relationship with First Branch Ambulance.

8. It is the policy of the town that the Selectboard maintain an up-to-date Emergency Operations Plan.

9. It is the policy of the town to work with the Two Rivers-Ottauquechee Regional Commission to properly plan for hazard events.

Recommendations

1. The Selectboard should update the Basic Emergency Operations Plan on a yearly basis.

2. The Selectboard should adopt a Hazard Mitigation Plan with assistance from the Two Rivers-Ottauquechee Regional Commission

3. Ensure adequate water supplies for fire-fighting and protection throughout Chelsea. Construction of new ponds should be coordinated with the Fire District to equip dry hydrants where appropriate.

4. Carefully evaluate road and driveway access to proposed developments for fire trucks and other emergency vehicles. Fire trucks are very large vehicles that travel at high speeds enroute to a fire. The safety of the firemen and the expensive trucks should not be endangered by roads and driveways, which are too steep or narrow, or in poor condition.

5. The District should continue to manage its financial affairs, anticipating the need for additional or replacement equipment and planning accordingly. It should monitor the availability of grant money for equipment and training and apply when possible.

6. Although the Town has six dry hydrants, more should be pursued.

IX. Natural, Scenic and Cultural Resources

A. Background

The rural landscape is of the utmost importance to the Chelsea community, both for its utility and its scenic value. Chelsea residents value working lands that are conducive to recreation, productive employment and attractive to visitors. Residents want to maintain the quality of their landscape for the future, to protect the natural world they value, while allowing the land to be worked safely and productively.

Goals

1. To productively work with the land while protecting natural resources and maintaining the quality of the landscape.

Policy

1. It is the policy of the town to protect the natural, scenic and historic character of Chelsea's working landscape through thoughtful planning, productive uses and active stewardship.

B. Water Resources

Water resources include aquifers (the supply of fresh water beneath the ground) and surface waters (includes streams, ponds and lakes). Sustainable yields of quality water are necessary for the lives and livelihood of citizens of Chelsea. Chelsea has no mapped groundwater information.

Riparian buffers are strips of bankside vegetation along waterways that provide a transition zone between water and land use. Construction or development along streambanks, or removal or disruption of vegetation within these areas can create increased water pollution, higher water temperatures, destabilization of banks, higher soil erosion rates and loss of fish or wildlife habitats. Chelsea does not currently have riparian buffer requirements in the Zoning Bylaw.

The health of Chelsea's surface waters is essential to maintaining quality groundwater, as well as an important element for outdoor recreation and natural beauty. The protection of Chelsea's surface water is essential due to the abundance of drilled wells that provide water to homes.

Goals

1. To maintain or enhance the quality and quantity of surface and groundwater resources.

2. To allow use of groundwater resources by new development in such a manner to protect the public right to adequate quality and quantity of the resource.

Policies

1. It is the policy of the Town that land use activities be carefully reviewed and monitored to protect groundwater and surface water quantity and quality.

2. It is the policy of the Town that the location, sizing and density of on-site sewage disposal facilities must be in accordance with best practices and current Agency of Natural Resource regulations.

3. It is the policy of the Town that preservation of the natural state of streams should be encouraged by protection of mapped wetlands and maintenance of existing stream bank and buffer vegetation including trees.

4. It is the policy of the Town that development in Chelsea shall be permitted only if it does not result in the pollution of ground or surface waters or cause unreasonable reductions in supply.

5. It is the policy of the town to support efforts to reclaim and protect riparian buffer areas.

Recommendations

1. The planning commission should encourage the Agency of Natural resources to map Fluvial Erosion Hazards in upland streams.

G. Working Landscape

Commercial forestry and forest products are an important part of the local economy. According to the 2010 US Census, forestry and farming together currently employ roughly 7% of Chelsea's residents. As a key part of this Plan, residents recognize the value of Chelsea's working landscape, and seek to maintain and encourage agricultural and forestry development in the community.

Forestry

There are a total of 25,655 acres in Chelsea. Based on Landsat data, approximately 70-75% of the Town is forested. Chelsea's forests provide both a source of income for landowners and employment for some members of the Town, particularly foresters, sugarmakers and loggers; they also support hunting, hiking, snowmobiling, and other recreational activities. Vital watersheds are protected by our forests, which purify the water that feeds the first branch of the White River. Critical forested wildlife habitats also exist here. The scenic character of the interspersed forest and farmland in Chelsea is valued by residents and visitors alike.

The unique soils and bedrock in Chelsea and the surrounding area produce some of the best hardwood forests in Vermont. Chelsea's forests are made up of a combination of hardwoods such as maple, ash, birch and beech and softwood such as pine, hemlock, fir and spruce. As has been the pattern over the past century, farmland continues to be abandoned and reclaimed by the forest. Forests have their benefits, but a continued loss of open space is not entirely desirable. Like forests, open fields also provide aesthetic

value, recreational opportunities and valuable wildlife habitat. A balance of forests and open space is desired.

Farming

Agriculture remains an important part of Chelsea's community. While forms of traditional agriculture (such as dairy) have declined, the number of smaller diversified farms has increased. Agriculture has a pronounced impact on the landscape. Open spaces available to the community for recreation and scenic beauty are only open because they are actively being worked or cleared.

The Plan encourages agriculture and forestry enterprises as long as they follow accepted agricultural and forestry practices as outlined by the Secretary of Agriculture. Although Chelsea does not have a substantial amount of large, commercial farms, there are a number of small in the community. These farms produce such products as maple products, eggs, vegetables and meats on a small scale. Many of these goods are sold locally. The town also supports the development of locally-produced, value added products. During the summer there is a weekly farmer's market on the green in the Village.

Prime Agricultural Soils

Chelsea's prime and secondary statewide agricultural lands (approximately 930 acres see map #3) are 3.6% of its total land mass. These soils are located largely along the First Branch of the White River but are also present along upland streams throughout town. This distribution of quality soils and the small size of the fields make Chelsea unsuited to large scale agriculture but still viable for smaller niche and specialty producers.

Goal

1. To strengthen and maintain the Town's agricultural and forest economies and to ensure continuance of Chelsea's rural character.

Policies

1. It is the policy of the Town to avoid the fragmentation of valuable agricultural and forest lands by maintaining flexible zoning that encourages development at a scale that protects the working landscape.

2. It is the policy of the Town to support efforts to protect the working landscape through public and private means.

C. Wetlands

Wetlands are ecologically fragile areas and how these lands are managed has a direct bearing on the quality and quantity of water resources. The Vermont Water Resources Board estimates that wetlands comprise less than 5 percent of the surface area of Vermont. In addition to being Vermont's most productive ecosystem, wetlands serve a wide variety of functions beneficial to the health, safety and welfare of the general public, including the following:

- Retaining storm water run-off, reducing flood peaks and thereby reducing flooding;
- Improving surface water quality through storage of organic materials, chemical decomposition and filtration of sediments and other matter from surface water;
- Providing spawning, feeding and general habitat for fish;
- Providing habitat for a wide diversity of wildlife and rare, threatened or endangered plants; and
- Contributing to the open space character and the overall beauty of the rural landscape.

In 1986, Vermont adopted legislation for the protection and management of wetlands [10 V.S.A., Chapter 37]. Determination of whether a wetland merits protection is based on an evaluation of the extent to which it serves the general functions outlined in the bulleted list above.

Under the Rules, if land development can be expected to impact a protected wetland, such activity cannot commence unless the Vermont Agency of Natural Resources first grants a Conditional Use Determination (CUD). A CUD will be granted when the proposed use will not have an undue adverse impact on the function of the wetland. In many cases, such approvals are granted with conditions to mitigate impacts and to more readily protect wetlands.

For Chelsea, as well as the State, the most significant wetlands have been mapped and are included as part of the National Wetlands Inventory (NWI) prepared by the U.S. Fish and Wildlife Service. These wetlands have been delineated on USGS topographic maps, and by reference are made a part of this Plan (see Map 7, Natural Resources). Other smaller wetlands often do not show on these maps, so a field determination by a qualified biologist is needed for most activities that involve state permits. There are approximately 207 acres of mapped wetlands in Chelsea, the largest of which is located east of Town Farm rd.

In those towns such as Chelsea, that have zoning or subdivision regulations, final approvals cannot be granted for projects involving wetlands unless the Agency of Natural Resources has first had an opportunity to evaluate the effect of the project on the wetland [24 V.S.A., Section 4409]. It is important to note that future investigations of wetlands within Chelsea may result in additional areas being determined as significant or important for conservation. Setback requirements for wetlands vary as required by ANR staff, but communities are allowed to set more stringent requirements.

Goal

1. To identify and encourage land use development practices that avoid or mitigate adverse impacts on significant wetlands.

Policies

1. It is the policy of the Town that structural development or intensive land uses shall not be located in significant wetlands.

2. It is the policy of the Town that development adjacent to wetlands should be planned so as not to result in undue disturbance to mapped wetland areas or their function. Mitigating measures to protect the function of a wetland are an acceptable measure.

3. It is the policy of the Town that no development is to be located in or allowed to fill in or alter any mapped wetland area.

D. Flood plains

Floods are inevitable and uncontrollable natural events which occur sporadically and affect lands adjacent to watercourses. It is therefore in the public interest to plan for floods, and to implement land use strategies which will protect these areas and minimize the risks to public health, safety, and property.

Floodplains, lands adjacent to watercourses (streams, brooks or rivers), are periodically inundated by heavy rains or during spring thaws. They are porous and can absorb considerable water before reaching flood stage. Floodplains make excellent agricultural land but are poorly suited for development, both because of their propensity for flooding and because of their proximity to watercourses, which creates the potential for pollution. Approximately 330 acres in Chelsea are within the floodplain area.

Vermont has experienced fifteen statewide and regional floods since 1973. All but one of these were declared federal disasters, and economic losses were significant. Damage was not limited to designated floodplains, but often occurred along unstable river systems and steep streams, and in areas where stream debris was excessive. In some cases, recovery costs to the Town of Chelsea alone amounted to several million dollars per flooding event. Public interest dictates that every reasonable attempt should be made to avoid or reduce such exposure to flood damage.

National Flood Insurance Program (NFIP)

Under the provisions of the National Flood Insurance Act (1968), the Federal Emergency Management Agency (FEMA) has conducted a series of evaluations and hydrologic engineering studies to determine the limits of flood hazard areas along streams, rivers, lakes, and ponds expected to be inundated during the 100-year base flood, meaning that the flood level has a 1% chance of being equaled or exceeded in

any given year. The calculations do not take into account the impact of ice dams or debris, and may, therefore, actually underestimate the areas which are subject to flooding damage.

FEMA has prepared a Flood Hazard Boundary Map for the Town of Chelsea, which includes flood hazard areas for the First Branch of the White River and for major streams and ponds. This map is on file at the Town Office and at the Regional Commission. The Flood Hazard Area is indicated in Map #1, Future Land Use. If in doubt when developing, contact the Chelsea Zoning Administrator.

FEMA also administers the National Flood Insurance Program, which provides flood hazard insurance at subsidized rates for property owners in affected areas. In order to qualify for federal insurance, towns must adopt and retain a by-law to control land development within these areas. Minimum standards must be included and approved by FEMA. Coverage is only available to landowners in town if a town elects to participate in the program. The Town of Chelsea has a stand-alone Flood Hazard Bylaw, and is recognized as a participating community in the National Flood Insurance Program.

As has been discussed in previous chapters, a substantial number of buildings in Chelsea are located in the FEMA Floodplain, many of them located in the Village Area. The Two Rivers-Ottauquechee Regional Commission has determined that a total of 67 buildings (not including structures such as barns, garages or outbuildings) in Chelsea are presently located within the mapped flood hazard areas. Of these buildings 50 are residences and 16 are commercial in nature. In the village, just over 50% of all structures are in the mapped floodplain. Mortgage lending institutions require as a prerequisite to financing that flood insurance be purchased on property subject to flooding.

Fluvial Erosion Hazards

Much flood damage in Vermont is associated with stream channel instability, also known as the fluvial erosion hazard (FEH), as opposed to inundation related losses. This is a reflection of Vermont's natural geography and its man-made landscape consisting of steep, relatively narrow valleys with agricultural land uses, highway infrastructure, private residences and commercial properties located in close proximity to stream channels. River channels that are undergoing an adjustment process as a result of historic channel management activities or floodplain encroachments oftentimes respond catastrophically during large storm events.

Historically, landowners and local government have relied on the standards and the flood hazard boundary maps provided by FEMA though the National Flood Insurance Program (NFIP) to determine areas within river corridors susceptible to flood damage. The maps are also used to delineate the allowable (floodway) limits of river corridor encroachments and human land use investments. However, the NFIP maps address only inundation issues by applying a water surface elevation based standard. For this reason the NFIP maps are often inadequate as an indicator of flood hazards, especially erosion. The NFIP standards do not recognize the danger present in unstable channels which may be undergoing a physical adjustment process. The stream bed may be eroding or it may be actively aggrading due to erosion occurring upstream.

The NFIP standards often allow for significant encroachment within floodplain areas and river corridors that may prevent the stream from ever reestablishing its stability. Special mapping and geomorphic

assessments can identify FEH areas along rivers, more comprehensively defining high-hazard areas. As of the writing of this document, Chelsea does not have any mapped Fluvial Erosion Hazard Areas, but the process is underway to collect this data. Once this data has been accumulated, the Planning Commission will want to consider how it may be useful as part of the Flood Hazard Bylaw.

Severe Flooding Events

In 2011, Vermont was struck by Tropical Storm Irene, which inundated the region with heavy rains and severe flooding. Regional damage was severe enough to warrant a federal disaster declaration. Fortunately for Chelsea damage was minimal, but it was clear to all that had the same intense rain hit Chelsea, it could have had a devastating impact on the community, particularly in the Village Area.

Surprisingly, the bulk of the impact of Irene's inundation was not in the area mapped by FEMA as flood plain or fluvial erosion hazard areas. Instead, the flood waters did their greatest damage along steep side streams that flow into larger rivers. Stream valleys are common locations for rural roads, and as such, much of the damage that occurred was to roads.

Flood Hazard Regulation

Chelsea's adopted Flood Hazard Bylaw sets the minimum development standards allowed by the NFIP. Considering the potential for severe flooding in Chelsea's Village Center, the Planning Commission is investigating alternative approaches to Flood Hazard Regulation. Any updates to the Chelsea Flood Hazard Bylaw that were more restrictive than they are now would apply only to new development – existing development would be grandfathered and could continue to operate within the area. Potential changes to the Flood Hazard Bylaw could cover a wide range of options, including:

- **Prohibition on New Development –** While most planners would suggest that a complete prohibition on new development within the floodplain is the best way to avoid future damages from extreme events, this is an unlikely approach in Chelsea. With a majority of Chelsea's Village Center Area located within the floodplain, such a prohibition could have a profoundly negative impact on Chelsea.

  Also important to consider is exactly what the definition of "new development" will include. The Planning Commission could include additions and renovations to existing structures over a certain size. This is not a commonly used methodology in most communities as it impacts grandfathered uses and can be challenging to implement.

- **Prohibition of Specific Types of Development –** An alternative to an outright prohibition on development is to identify specific types of development that should be kept from developing within the Floodplain. In some communities, new residential and commercial development has been prohibited from developing in the floodplain. In others, only residential has been prohibited. Decisions on which types of uses to prohibit are generally made with substantial

citizen input with considerations for what will most substantially reduce risks to lives and property.

- **Increasing Standards –** Communities can choose to increase the requirements for new developments in the floodplain while still allowing all or most forms of development. Increased standards could include a requirement that structures be elevated higher than the minimum standards required by the NFIP (one foot above base flood elevation). Such standards could also include more specific requirements for tying down structures or for making them more capable of allowing floodwater to pass through them.

- **Create River Corridor Protection Area** - Some communities have created an area that extends beyond the mapped flood hazard areas. Often this River Corridor Protection Area uses fluvial erosion hazard data as part of its basis, but can also include simple setbacks from rivers in all parts of the community as a way to deter development in areas that may erode in the event of severe flooding.

Future revisions to the Chelsea Flood Hazard Bylaw will require input from the community regarding the level of regulation they believe is necessary to protect citizens and their buildings from severe flood hazard events. Provided that all parts of the Flood Hazard Bylaw meet the minimum requirements of the NFIP, communities have a broad range of flexibility in which to regulate the flood hazard area. For example, a community could prohibit commercial development in the floodplain everywhere except a village, because in some communities such a restriction would be damaging to the village center.

Goals

1. To enhance and maintain use of flood hazard areas as open space, greenways, non-commercial recreation and/or agricultural land.

2. To minimize net loss of flood storage capacity in an effort to reduce potential negative impacts. These impacts include the loss of life and property, disruption of commerce, and demand for extraordinary public services and expenditures that result from flood damage.

3. To generate and maintain maps that reflect as accurately as possible the flood hazard areas to assist in appropriate land use decisions.

Policies

1. It is the policy of the Town that the preferred uses for flood hazard areas should be for open space, greenbelts, and non-commercial recreational or agricultural uses.

2. It is the policy of the Town that new or replacement utilities or facilities serving existing development (e.g. water lines, electrical service, waste disposal systems, roads, and bridges) may be located within these areas only when off-site options are not feasible and provided that these

utilities or facilities meet the flood proofing requirements in Chelsea's Unified Bylaw.

3. It is the policy of the Town to maintain its membership in the National Flood Insurance Program.

Recommendations

1. The Planning Commission should update the Flood Hazard Bylaw to ensure that it meets the standards required by the Federal Emergency Management Agency so that Chelsea may continue to participate in the NFIP.

2. The Planning Commission should consider using Fluvial Erosion Hazard data (when it becomes available) to create a river corridor protection area.

3. The Planning Commission should consider reducing the types of uses allowed within the mapped floodplain in order to protect lives and property.

E. Flora, Fauna and Natural Communities

The presence of flora and fauna in Chelsea's environment adds an important dimension to the quality of life of Chelsea's human population. Whether for hunting, fishing, photography or simply knowing that Chelsea is a good place for other species to live, it is in the Town's interest to work at maintaining a habitat for a wide range of flora and fauna. Management of natural communities requires management of human activities around plants and animals as much as management of plants and animals around human activities. Managing for specific species is not as desirable as managing for the entire ecosystem supporting the species.

In Chelsea, there are a broad range of communities that exist in the older forests, early successional forests, open fields and valley floors. The breadth and diversity of wildlife and plant communities indicate a healthy, thriving ecosystem. Yet, natural communities are usually strongly affected by the surrounding environment. Plants respond to soil structure and chemistry, hydrology, and climate. The effects of unmanaged development can have a negative impact on plant communities, which in turn will harm the overall ecosystem in the area affected.

Chelsea's fields, forests, wetlands and streams provide habitat to a diversity of flora and fauna. Although nearly all undeveloped land in the town provides habitat for these plants and animals, there are some areas which provide critical habitat that should remain intact. These areas include wetlands, vernal pools, and deer-wintering areas.

Wintering areas are an important habitat requirement for deer during the critical winter months when snow depth and climate are limiting factors to survival. Typically these areas consist of mature softwood stands, at low elevations or along stream beds, which provide cover and limit snow depths. Southerly facing slopes are also beneficial due to good sun exposure and may be utilized even in areas of limited softwood cover. More specific factors, such as percent canopy closure, species of softwoods, and stand

age, also figure into the quality of the wintering area. Chelsea has in excess of 2760 acres of deer wintering yards.

Most important when considering development and its impact on wildlife is the concept of habitat fragmentation. Forests provide habitat to a diverse population of wildlife, which are negatively impacted when forested land is fragmented through development. Forest fragmentation affects water quality and quantity, fish and wildlife populations, and the biological health and diversity of the forest itself. When many small habitat losses occur over time, the combined effect may be as dramatic as one large loss. Forest fragmentation can disrupt animal travel corridors, increase flooding, promote the invasion of exotic vegetation, expose forest interiors, and create conflicts between people and wildlife. Habitat loss reduces the number of many wildlife species and totally eliminates others.

To help mitigate the effects of human population growth and land consumption, many scientists and conservationists urge governments to establish protected corridors, which connect patches of important wildlife habitat. These corridors, if planned correctly, allow wildlife to move between habitats and allow individual animals to move between groups, helping to restore or maintain genetic diversity that is essential both to the long-term viability of populations and to the restoration of functional ecosystems.

Because of Chelsea's historic pattern of development, which features a higher density of residential development west of Route 110, the best available wildlife habitat in the community is on the eastern side of the community. In particular, the areas around Brocklebank Rd., Jenkins Brook Rd and Beedle Rd. are the most viable in terms of habitat quality. At some point in time, the community may want to consider conserving this area.

Goals

1. To sustain the natural diversity of flora and fauna found in Chelsea.

2. To maintain or improve the natural diversity, populations, and migratory routes of native species.

3. To allow sport and subsistence hunting in accordance with seasons and bag limits determined by the State Department of Fish and Wildlife.

Policies

1. It is the policy of the Town that native wildlife populations and natural diversity should be sustained and enhanced.

2. It is the policy of the Town that preference should be given to development that utilizes existing roads and whenever possible preserves existing agricultural use.

Recommendations

1. If a Conservation Commission is created, it should identify and map natural communities, critical habitats and wildlife corridors in Chelsea.

H. Invasive Species

Invasive non-native species are a growing problem throughout Vermont. Invasive plants are defined as those exotic species that typically spread from disturbed areas into natural communities, but many of these species are also impacting yards, agricultural fields, and working forests. In Chelsea the spread of invasives is negatively impacting the rural character of the town, reducing native plant populations and consequently affecting wildlife populations, creating economic impacts by dominating other plants in agricultural fields and inhibiting reproduction of trees in sugarbush areas and other forests, destroying the scenic quality of roadsides, reducing property values, and potentially posing health risks. At the present time, the greatest threats are posed by wild chervil (fields, roadsides and recently logged areas), Japanese knotweed (streams, rivers, roadsides, yards), and Japanese barberry (forests), but there are increasing threats throughout the region from garlic mustard, giant hogweed, and other invasives.

Some of these invasives, especially wild chervil and knotweed, have proliferated to such an extent that eradication from many sites is impossible, but there are still portions of the town that have not been infested. Diligence is necessary from town residents and employees to prevent the further spread of these species, and the introduction of new species that could pose more serious threats. For example, giant hogweed has been identified from several towns in Central Vermont. This Federally listed noxious weed produces a sap that, in combination with moisture and sunlight, can cause severe skin and eye irritation, painful blistering, permanent scarring and blindness.

One of the more common ways in which invasive species spread to new locations is when seeds or root segments are transported on vehicles, especially construction and logging machinery, mowers, etc. Best management practices have been identified for reducing the accidental spread of invasives including avoiding using fill from invaded sites, washing of equipment before leaving infected sites, stabilization of disturbed sites, timing of mowing, etc.

Goal

1. Reduce the impact of invasive species on agricultural native ecosystems.

Policies

1. It is the policy of the Town that new occurrences of invasive species should be controlled to prevent further infestations.

Recommendations

1. Town employees and contractors should become familiar with the best management practices to prevent the accidental spread of invasives. A Conservation Commission could conduct

workshops for town employees and residents on identification of invasives (to promote early detection) and control methods.

2. The town should consider developing criteria for new development projects that reduces the potential for new invasive plant infestations. (e.g., source of imported materials such as fill, hay bales, ornamental plantings, etc.)

3. The Town should time roadside mowing to minimize the spread of invasive species.

4. A Conservation Commission could conduct an inventory of invasive species that could be used as baseline data to assess the future spread.

I. Mineral Resources

The use and management of Chelsea's earth and mineral resources are matters of public good. Maintenance of sustainable quantities of gravel, sand, crushed rock, and other materials are essential for business development, as well as state and local highways. In spite of this, public and private interests are oftentimes in conflict over use of the resource. It is in the interest of the Chelsea business owners and residents to enable utilization of these resources when such uses do not significantly inhibit or conflict with other existing or planned land uses, or are in conflict with other stated goals in this Plan.

Goal

1. To support extraction and processing of mineral resources only where such activities are appropriately managed and the public interest is clearly benefited. Any support shall be balanced against the need to maintain the rural character valued by the citizens of Chelsea.

Policies

1. It is the policy of the Town to consider pollution, noise and vehicle traffic as part of the decision making process when reviewing proposed mineral extraction projects.

2. It is the policy of the Town to consider levying usage fees for high traffic, high volume mineral extraction facilities.

3. It is the policy of the Town that existing and proposed mineral extraction and processing facilities shall be planned, constructed, and managed,

    - So as not to adversely impact existing or planned uses within the vicinity of the project site;
    - To not significantly interfere with the function and safety of existing road systems serving the project site;
    - To minimize undue adverse effects on water quality, fish and wildlife habitats, viewsheds and adjacent land uses.

- To reclaim and re-vegetate sites following extraction.
- To minimize noise impacts on adjacent uses including residential areas.
- To maintain the rural character of the Town.

J. Significant Natural and Historic Areas

While Chelsea residents would agree that the entirety of the community is significant for its beauty and its rural landscape, there are several areas that represent the most significant places in town. These lands are what most residents agree make Chelsea the place it is today. These areas include:

- Chelsea Commons – Chelsea's two historic town commons are used for recreation and community events.

- Town Hall – The Chelsea Town Hall is the largest available space to rent in the community. The hall hosts musical and theatrical events as well as a local flea market and other community events. The building is also home to the Town Clerk's Office and Library.

- Heath Field – The Heath Field is Chelsea's only community recreational field. It is used for the Chelsea School's athletics events as well as summer camp. During the winter it hosts a skating rink.

- Bradshaw Crossroad – The crossing at Bradshaw Crossroad and Brook Road was once home to a small hamlet community in Chelsea. The West Hill Church and Baptist Church remain in this area, along with a mix of residences.

K. Conservation Commission

Vermont statute enables communities to create a Conservation Commission (CC), a volunteer board that focuses specifically on the natural, scenic and cultural resources within a community. A CC may conduct inventories of natural resources, recommend the purchase of or the receipt of gifts of land to the Selectboard, assist the planning commission with natural resource planning and maintain a conservation fund.

The CC, at the discretion of the town, can manage a fund which is to be used to assist with the purchase or conservation of property with the intention of protecting natural resources and implementing the town plan. Any use of such a fund requires support from the Selectboard.

Chelsea does not have a Conservation Commission at this time.

L. Land Protection Strategies

Methods of protecting significant lands are varied. In general, there are two ways to encourage the preservation of culturally and naturally significant areas: regulatory & voluntary. Voluntary methods include:

- Preserving land by placing restrictions on its use, through such tools as conservation easements or mutual covenants.

- Transferring land to a conservation organization (such as the Vermont Land Trust) through donation.

- Selling or donating land with conditions attached, like deed restrictions or conditional transfers.

M. Goals, Polices and Recommendations

Goals

1. To identify and protect those natural and historic resources that are unique to Chelsea and make it special.

2. To preserve and protect Chelsea's important cultural and natural resources for future generations.

3. To allow for reasonable development without sacrificing important cultural and natural resources.

Policies

1. It is the policy of the town to ensure careful review of all development projects to minimize the impact on Chelsea's natural and cultural resources.

2. It is the policy of the Town to protect unique resources by careful planning.

3. The Selectboard should consider creating a Conservation Commission.

X. Agriculture and Forestry

A. Background

Agriculture and forestry define the character of Vermont and comprise major industries in the Region. Unfortunately, these industries are by no means secure. The shape of Vermont agriculture and forestry are changing and the pressures for change come from both inside and outside the state. This poses difficult challenges, not just for landowners, but for all who desire a rural lifestyle and working landscape. Unless policymakers at the federal, state, and local levels, citizens, and the farming and forestry community confront the economic problems facing the industry and seize the opportunities that the challenges present, the agriculture and forestry sectors will continue to erode away. Jobs will be lost to other pursuits and the Town will lose s valuable part of its history.

B. Farm and Forest Land Issues

Land and Taxation

Growth in the Town's population and an economic restructuring or a shift away from agriculture to the service and tourism industries in Vermont has placed economic pressure on farm owners. The higher cost of owning land makes it difficult to maintain commercial-scale farming. Owners of forestland most often are faced with a tax bill on land that exceeds its economic value for timber production. This coupled with a need for house lots or development land in general, has prompted landowners to place their land on the market for these purposes.

Current Use Taxation

For farmland and forestland conservation to be successful, the pressures posed by the market value approach to taxation must be solved for both the landowner and municipality. One means to address this issue has been the Vermont Current Use Program administered by the State which sets the valuations on farm and forest land based on their productivity values rather than their development values.

The Current Use Program was established in 1980 with the primary objectives to keep Vermont's agricultural and forest land in production, to help preserve these lands and to achieve greater equity in property taxation. While there have been legislative changes in the Program, particularly in 1996 when the State turned the Program over to towns to finance, the overall philosophy remains largely unchanged. Statewide, enrollments and the number of parcels have increased steadily over the past few years and withdrawals from the Program limited, despite an inability for the State to fully fund the towns for loss of tax revenues.

In 2002, a total of 55 parcels comprising 14,484 acres of farm and forest land were enrolled under the Program. This amounted to roughly 23 square miles or nearly 50% of the total area of 46.17 square miles in Chelsea. Only one dairy farm was operating in Chelsea in 2003.

Historic Decline in Farms

During the early to mid-1900's, Chelsea had many more farms than it has today. It was not uncommon for these farms to be operated by multiple generations of a family during the early to mid-1900's, but in the 70's and 80's younger generations became less interested in farming. By the 1980's many of the farmers who followed in their parents footsteps had reached their later years of life, making farming a challenge physically. This, coupled with the lack of a successor to take over the farm also led to the closing of some farms.

Farms of the early to mid-1900's were generally diversified in nature, having a wide range of products which were sold at a broad number of markets locally and in New England. In the 1950's and 1960's, trends in agriculture began to move from this diversified model to one where farms specialized primarily in a single product -- dairy. This reliance on a single product put farmers at the mercy of national milk markets, which were notoriously unstable. The primary reason that farm closures occurred, particularly during the 1980's, was due to instability of milk prices, one of several key moments in agricultural history that have impacted farming in Chelsea. Other issues included:

- Government mandate that all farms have bulk tanks and parlor floors
- Consolidation of farms
- Impacts of mechanization

C. Agricultural Trends

An analysis of the United States Census of Agriculture data between 2002 and 2007 (2007 being the most recent period of data collected) shows that farming in Vermont is slowly shifting away from the larger scale farm that developed as a result of trends toward consolidation. Between 2002 and 2007, the number of farms in Vermont increased by 6%. The average size of farms decreased from 189 acres to 177 acres between ag censuses. This is most likely due to the fact that 37% of Vermont's farms in 2007 were considered "hobby farms" – farms that sell under $2,500 in agricultural products per year. While the number of "hobby farms" continues to grow, these farms only produce slightly less than 3% of Vermont's agricultural income.

For census purposes, a farm operation is defined as "a place from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year."

In Chelsea, as in the rest of Vermont, the scale and style of farming has changed. The 2007 Census of agriculture reports that there are 58 farm operations (full or part-time). More than 80% of these operations utilize more than 50 acres of land. Products grown or produced on farms in Chelsea include milk, hay, corn, maple syrup, fruit, cattle, horses, chicken, and sheep. The majority of these farms are likely to be small in size.

D. Forestry Trends

Three primary trends have affected the Region's forestland and its productivity. First, forests and farms are being increasingly "parcelized" or subdivided into small lots which threaten the economic viability of forestry. Orange County in 1989 ranked second in the State in the amount of land being subdivided and sold. Development pressure in the Region has been relaxed since the early 1990's, but trend of land moving out of forest use to other uses will continue, particularly in those areas where access and development suitability are not severe.

Second, The lack of sawmills in this region is of concern as it forces timber harvests to be shipped elsewhere in the state (or, more often, out of state) to be processed. This results in lost revenue for residents, can minimize the opportunity to create value added wood products, and increases the 'carbon footprint' of an operation (due to the fuel burned during transportation). But, while the number of mills in the Region has declined there has been a move to new markets, one being an export demand for hardwood logs and another being a demand for pulpwood and other specialty types. For a state mostly known for hardwood, the demand for pulp has led to better managed forests because it is generally the lower grades or poorer cuts that are being used.

Third, federal and state estate and inheritance tax laws have placed family landowners into financial predicaments where they need to subdivide or develop forest land in order to cover taxes. Current tax law bases estate values on the market value of land rather than at use value. By allowing land to be assessed on the basis of current use, family landowners are able to realize a more reasonable return on investment for long-term timber management.

Forest products continue to be part of the Region's manufacturing sector, although the way statistics are kept makes it hard to quantify. In looking at the Vermont forest products industry, it is worth noting that the industry, like agriculture, has virtually no impact in setting trends as it is a relatively small national producer. A major long-term issue for the Vermont forest products industry is how to keep it from drifting into the position of selling wood as a raw material without benefiting from the higher paying jobs that come from value added wood products.

E. Agriculture, Forestry and Land Use Regulation

Land use regulation has a definite impact on farming. For example, a zoning ordinance that allows for large tracts of land to be sold for residential purposes could conceivably help protect open space, but that open space might no longer be available for agricultural use without considerable forethought and design. The same ordinance calling for much smaller lot sizes (such as one acre) would, over time, lead to an incremental decrease in the amount of useable farmland.

Therefore, if Agricultural uses are to be preserved, we need to protect them. V.S.A. Title 12, Chapter 195, Section 5753 is intended to protect farmers against nuisance law suits. It states that:

Agricultural activities shall be entitled to a rebuttable presumption that the activity does not constitute a nuisance if the agricultural activity meets all of the following conditions:

a) It is conducted in conformity with federal, state, and local laws and regulations (including accepted agricultural practices);
b) It is consistent with good agricultural practices;
c) It is established prior to surrounding nonagricultural activities; and
d) It has not significantly changed since the commencement of the prior surrounding nonagricultural activity.

However, there have been circumstances where the state statute has not offered enough protection.

While the value of Agriculture and Silviculture are recognized in Chelsea and much of Vermont, both activities do have the potential to cause harm to the environment. Overuse of fertilizer in areas immediately adjacent to waterbodies creates runoff that can increase the amount of phosphorous in the water to environmentally harmful levels. Likewise, clear cutting without any regard for topography and runoff can cause damage in the form of landslides and groundwater contamination. The state has established Accepted Management Practices for agriculture and silvicultural which, if followed, should protect the environment while allowing for the continued growth of the agricultural and silvicultural products industries.

F. Sustaining Agriculture and Forestry

Planning policy and implementation efforts should be directed at sustaining agriculture and forestry pursuits and not just conservation of the resource. This is not only because it is the best way to keep the land open, but also because agriculture and forestry are critical industries in the Town and Region.

Just as there is a variety of interests, there is a variety of tools than can be used to conserve these resources. Some are directed primarily at sustaining agriculture, others forestry, some are regulatory in nature, others are compensatory, and others voluntary. It is in the public interest to encourage conservation groups, landowners, local officials, and policymakers to utilize all of these tools.

Conservation Easements

Conservation easements are a common method used to ensure that the working landscape gets preserved. The Vermont Land Trust (VLT), Vermont's largest non-profit conservation organization, has conserved more than 590 parcels of land in agricultural use throughout the state, totaling 145,109 acres. Approximately 484 acres of land have been conserved by VLT in Tunbridge. Most land purchased with the intent of applying a conservation easement to it is funded, at least in part, by some form of grant funding from either state or private sources.

The use of conservation easements has both pros and cons for municipalities, they include:

Pros

- Easements are flexible; they can be written to achieve specific goals of the town involved.
- They are perpetual, and restrictions put on the conserved lands will remain in force even when the property is sold to a new party.

- They conserve scenic beauty and environmentally sensitive areas.
- Eased property remains on the tax rolls.

Cons

- Establishing an easement involves up-front costs, such as paying for legal counsel, biological analysis, etc.
- There are long-term expenses involved with monitoring the easement.
- The easement holder is responsible for ensuring that the restrictions placed on the easement are followed.

The Chelsea Planning Commission acknowledges that conservation easements are one potential solution to preserving the working landscape. The Planning Commission recommends that both the landowner and town consider all options thoroughly before committing to the conservation easement process.

G. Farming, Forestry and the Economy

In addition to preserving Chelsea's working landscape and maintaining the community's aesthetic beauty, farming and forestry can have an economic impact. Vermont is within easy reach of millions of people in cities like Boston and New York City. Rising fuel prices have led to an increased interest in food and energy security. Additionally, Vermonters are increasingly seeking locally-sourced, sustainably-produced farm and forest products. Vermont is a national leader in innovative education programs based on local food, agriculture and healthy eating. It is also widely recognized for its strong network of land trusts and other nonprofits that are models for conserving farm and forest lands.

There is already an growing mix of emerging entrepreneurs and long-time land-based businesses that are constantly evolving to stay competitive. They're producing biofuels, artisan cheese, specialty wood products, produce, breads and other value-added items.

For Chelsea, it is essential to encourage the growth of both forestry and agricultural industries within the community. These enterprises will continue to sustain the natural character of the town while adding the potential for jobs and unique and creative attractions that will bring people into the community for recreation and education. If tourists come to Chelsea to visit a new organic farm or specialty wood or forest product producer, they will need a place to stay for the night, they will buy dinner at local restaurants, adding additional capital to the local economy.

H. Goals, Policies and Recommendations

Goals

1. Encourage the conservation, wise use and management of the town's agricultural and forestry resources, to maintain its environmental integrity, and to protect its unique and fragile natural features.
2. Protect the Region's rural agricultural character, scenic landscape, and recreational resources.

3. Preserve recreational and scenic access by ensuring that at the completion of logging projects all roads are restored to their previous condition.
4. To encourage the economic growth of agricultural and forest operations at a scale that is appropriate for Chelsea.

Policies

1. Where contiguous areas of high value farming or forestry exist, or have significant potential to exist, fragmentation of these areas into uses other than those incidental to agriculture or forestry should be discouraged.
2. Where high value agricultural and forested land are identified, clustered or peripheral development is especially encouraged to protect such resources and prevent fragmentation and sprawling settlement patterns.
3. Contiguous forest and significant agricultural areas should remain largely in non-intensive uses unless no reasonable alternative exists to provide essential residential, commercial and industrial activities for the Town's inhabitants.
4. The construction of utilities, roads or other physical modifications should skirt tracts of productive agricultural land rather than divide them.
5. Farmers, loggers, and foresters should use Accepted Management Practices (AMP) and are encouraged to implement Best Management Practices (BMP) in their operations and to minimize point and non-point source pollution.
6. Support the development of value-added farm and forestry products in Chelsea.

Recommendations for Action

1. Local land use planning activities and programs affecting agriculture and forestry should consider the ways to promote these industries. This could include local bylaws and the creation of farm and forest land conservation programs, including:

    - transfer of development rights
    - purchase of development rights
    - cluster development
    - area based allocation
    - performance standards
    - impact fees;

2. To promote a better understanding of the farming and forestry practices, and natural resource management in general; the industry, conservation organizations, public schools and the tourism and recreation industries should sponsor continuing educational opportunities to the public.

XI. Land Use Plan

A. Background

The Land Use Plan is the most important section of a Municipal Plan. It is used as a guide for the Town's land use regulation. The Land Use Plan in conjunction with the Town's Bylaws is used to implement the Municipal Plan and the wishes of the community.

The foundation of a Land Use Plan is:

- a detailed analysis of land use capability;
- the existing transportation network;
- the existing land use inventory;
- the goals of the community.

By evaluating these factors simultaneously, it is then possible to determine which areas are appropriate for new or increased development and which ones are unsuitable or should be protected. In addition, this analysis yields specific areas which should be preserved or protected and areas which are inaccessible and unsuitable for any development. The town's goals are then applied through planning tools like established development densities and land use districts for specific uses.

Seven land use categories have been defined and mapped in Chelsea. As development proposals come forth for permits and review, this Plan shall be used as guide for suggesting modifications which will allow the development to occur in a manner consistent with the policies in the Plan.

B. Current Land Use

Chelsea was settled following a land use pattern similar to other small rural New England towns. This consists of a village area compactly settled, surrounded by less dense settlements (rural in character) with large tracts in natural vegetation or forests. Overall, this pattern has proven itself to be of sociological, economical, and aesthetic benefit to Chelsea’s citizens. The village of Chelsea provides an efficient place to conduct business and support social and community facilities and services. However, given the impact of Tropical Storm Irene on neighboring communities, and the potential for such a hazard event to occur in Chelsea, it is recognized that the village is at serious risk of flooding. While it is the goal of Chelsea to protect and enhance this pattern whenever practical, the Planning Commission recognizes that changing this pattern to protect the citizens of Chelsea is an idea worth consideration.

C. Future Land Use

Based on the Land Use Goals contained in Section B of Chapter one, the following future land use categories are recommended:

Village Area

This land use area is intended to act as a center of high-density development that includes mixture of housing types, commercial uses (including primary retail), services, small industry, and community facilities and services. Existing retail establishments should continue to be located in the Village district area to minimize sprawl and loss of rural character. Because the Village District is served by an off-site public sewer system with a secondary sewage treatment, higher density (lots as small as ½ acre in size) and intensity of uses is appropriate, providing that they are of the same character as existing development.

It is important to sustain existing commercial development within the Village Area because it is especially appropriate and necessary to maintain the distinct character of the community. A substantial portion of the Village Area is within the floodplain (100 & 500 year), the town should discourage new development in these areas (particularly commercial development). Continued rehabilitation and reuse of existing structures is encouraged. Enlarging the Village Area around the margins of the existing district to areas that could be served by the municipal sewer system is also a viable means of meeting the development needs of the town and strengthening the village center, but much of the land outside of the village is also in the floodplain.

Entranceways, the sequence of views as one arrives into, or departs from, Chelsea's village areas are critically important to the visual quality of the Town. Entranceways are where first impressions about a place are formed and are often the visual character non-residents associate with the Town. The views of Chelsea's village directly impact the experience of those places. Views to the wooded hillsides and natural skyline add to the historic character of Chelsea's village.

Goals

1. To encourage the growth of Chelsea’s village in the parts of the Village Area that are outside of the Flood Hazard Area.

2. To provide a location for higher density residential and commercial development at a scale that does not negatively impact Chelsea’s ability to provide services or protect homes and businesses from severe flooding events.

Policies

1. That the establishment of small scale commercial uses and higher density multi-family housing in the Village Area while balancing the flood safety and the character of the village be encouraged.

Recommendations

1. The Planning Commission should modify the zoning bylaw to encourage clustered commercial development in other areas of town.

Village Center Design Control Overlay Area

The natural beauty and visual character of the Village Center Design Control Overlay Area are important assets and contribute substantially to the economic welfare of the community. The Historic Area reflects

Chelsea's historical, social, cultural and economic history. These values are worthy of conservation and preservation. To ensure that these characteristics are maintained or promoted, it is in the public interest that buildings and other improvements are properly related to their sites and surrounding sites and structures; and that proper attention be given to the exterior appearance of structures and other improvements so as to promote a means in which property values can be improved or stabilized and to protect and foster the economic, cultural and social well-being of the community.

When new buildings or structures are proposed, they should have a design that fits with the area and is sensitive to the character of the neighborhood. Unnecessary destruction of historic structures is discouraged. Public improvements such as bridge rehabilitation or replacement, roadway reconstruction, signage, and lighting should be designed to avoid unnecessary degradation of this recognized historic area.

Goals

1. To ensure that development within the core historic area of Chelsea's Village is designed in such a fashion that it fits harmoniously with the overlay.

Policies

1. That development within the Design Control Overlay Area be designed in such a way that it maintains the historic character of the village.
2. That the town should encourage the adaptive reuse of historic structures that are located outside of the mapped floodplain.

Rural Residential Area

The Rural Residential Area are all lands not included in either the Village Area , Industrial Area or Mixed Use Development Area. The Rural Residential Area is predominantly forested and interspersed by farmland, it is also the location for much of Chelsea's housing stock. However, some non-residential uses, including individual services and commercial outdoor recreation are acceptable provided that such uses are planned as relatively small in size or scale. This pattern of use should continue to be its primary purpose and density should be lower than the Village Area, with a minimum of roughly 2 acres per parcel.

This Area can support moderate residential development provided that on-site effluent disposal systems can be operated properly. The least developed portion of the Town typically is severe to moderately inaccessible except by trails and roads that are not maintained by the Town (Class 4). Much of the area is steep and has shallow soils with elevations that range from 1,500' to 2,200' in elevation. Residential density should vary depending upon the limitations found during the detailed land capability analysis and the degree of utilization of cluster housing development.

Non-residential uses, including service businesses, professional offices, and inns, are acceptable land uses for rural areas provided that such uses are planned as relatively small in size or scale. Primary retail establishments are not recommended for rural areas and are encouraged to locate within the Village Area

or specific areas identified per this Plan. Agricultural, forestry and recreational uses are strongly encouraged in the Rural Residential Area.

Goal

1. To maintain and preserve the more rural areas of Chelsea and encourage the continued vitality of the working landscape.

Policy

1. To maintain the pattern of sparsely populated development that protects the natural and working landscape.

2. To discourage high density development or intensive uses that would require the provision of additional services (such as extending roads) or have an undue adverse impact on the rural character of this area.

Flood Hazard Area

The Flood Hazard Area comprises areas along major streams subject to flooding as defined by Federal Emergency Management Agency. Floodplains (flood hazard areas) are that low area adjacent to rivers and streams that periodically become inundated with water during times of high rainfall and spring runoff. They serve to retain water preventing damage elsewhere. Some Flood Hazard Area lands comprise the best agricultural land because of their thick glacial deposits, minimum slope and proximity to surface water.

The damages in neighboring communities caused by Tropical Storm Irene in 2011 highlighted the need for Chelsea to reevaluate the requirements of the Flood Hazard Area, both in terms of uses allowed and in terms of the area designated as Flood Hazard Area. Much of the flood damage from Irene occurred in locations outside the mapped flood hazard area. Because FEMA mapped floodplains are not as accurate as the community would like, alternative ways of interpreting the flood hazard area, including improved maps or expanded stream buffers may need to be considered in the future.

It is the purpose of this land use area to:

1. Implement the goals, policies, and recommendations in this plan;
2. Avoid and minimize the loss of life and property, the disruption of commerce, the impairment of the tax base, and the extraordinary public expenditures and demands on public services that result from flooding related inundation and erosion;
3. Ensure that the selection, design, creation, and use of development in hazard areas is reasonably safe and accomplished in a manner that is consistent with public wellbeing, does not impair stream equilibrium, flood plain services, or the stream corridor;
4. Manage all flood hazard areas designated pursuant to 10 V.S.A. Chapter 32 § 753, the municipal hazard mitigation plan; and make the Town of Chelsea its citizens, and businesses eligible for federal flood insurance, federal disaster recovery funds, and hazard mitigation funds as may be available.

Development in this Area should be limited in accordance with the Chelsea Flood Hazard Bylaw administered by the Town. New structural developments within the limits of the 100 year floodplain are discouraged. Where such development is to occur, the development should be designed and located so as not to impede floodwaters. No structural development shall be located within the actual limits of a floodway.

Goal

1. To protect the citizens of Chelsea by using good planning practices within designated Flood Hazard Areas and Fluvial Erosion Hazard Areas.

Policy

1. That the primary uses allowed in the Flood Hazard Areas located outside of the Village Area should be agriculture, recreation and open space.

Recommendations

1. When Fluvial Erosion Hazard data becomes available, the Planning Commission should consider modifying the Flood Hazard Bylaw to expand the level of flood protection in these areas.

Industrial Area

The Town recognizes the importance of promoting appropriate industry and providing sound and gainful employment opportunities for its residents. While evidence shows that a majority of Chelsea's industrial job workers have jobs outside of Chelsea, there is a need to provide an area to support industrial activity locally. The Industrial Area has been chosen because of its relative ease of transportation access, power availability, and opportunity to obtain sewer and water services off-site.

The preferred uses for this Area include manufacturing and service establishments, corporate offices, and assembly firms. Businesses that are generally classified as clean and non-polluting are encouraged to locate here. Where residential development needs to be accommodated, special considerations for buffering this use from non-residential uses needs to be employed. Density should be between one and two acres depending on the type, with higher density being allotted to commercial and industrial uses and lower density for residences and home businesses.

Goal

1. To encourage a strong and diverse local economy that provides satisfying and rewarding employment opportunities for residents while maintaining the community's rural character by providing locations in town where employers can locate.

Policy

1. It is the policy of the town to support opportunities for local industries that provide employment to the citizens of Chelsea provided that they are developed in a manner consistent with the character of the community.

Recommendation

1. The Planning commission should consider other locations for light industrial development.

Mixed Use Development Area

The dramatic impacts suffered by communities near to Chelsea during Tropical Storm Irene have made it clear that the existing pattern of development which encourages a majority of development to be clustered in the Village must be evaluated against the potential for flood hazard damages. Chelsea received little damage from Irene, but it is reasonable to surmise that had the weather patterns been slightly different, the tropical storm might have had a devastating impact on Chelsea's Village.

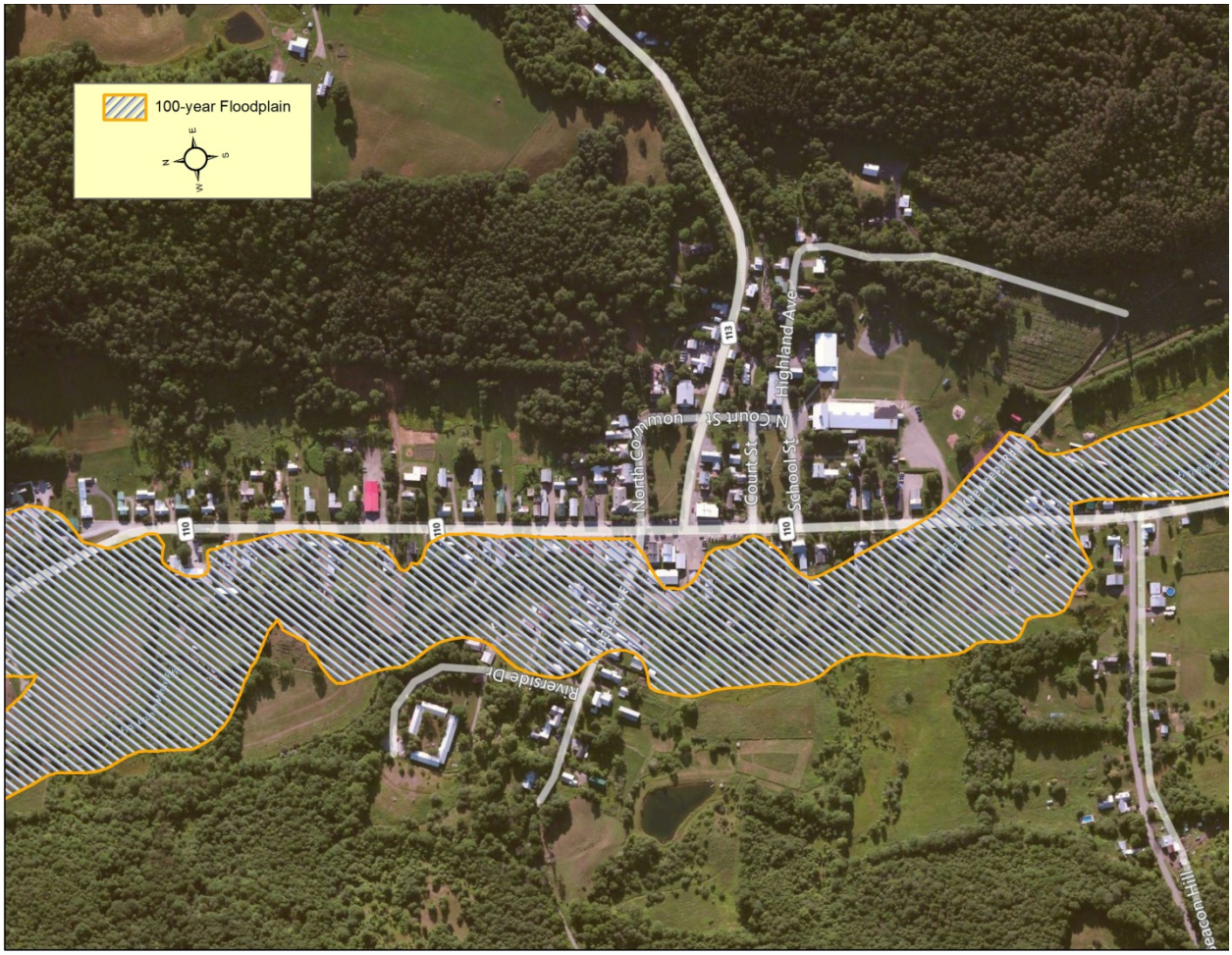


Figure 15: Chelsea Village Flood Hazard Area Coverage (100-year FEMA Floodplain)

In order to allow for continued commercial growth in Chelsea in a fashion will not encourage sprawl or strip development, but will provide an alternative location that is outside of the Flood Hazard Area, the Planning Commission proposes the creation of two Mixed-Use Development Areas. These areas have been selected for their adjacency to Route 113, their topography and their distance from the Flood Hazard Area.

The Purpose of the Mixed Use Development Areas will be to provide a flood resilient location for new commercial and mixed-use development in Chelsea. Within these areas, a mix of land uses would be acceptable. These uses could include primary retail establishments, service businesses, light manufacturing and professional offices as well as residences. Densities should allow for adequate septic and water access. All commercial development within the Mixed-Use Development Area should be subject to review criteria that includes performance standards. These standards, when used as part of conditional use review in the Chelsea Zoning Ordinance would allow the Development Review Board to require specific hours of operation, limit nuisances and generally encourage a mix of uses that is compatible with the surrounding area.

The Planning Commission recognizes that these proposed land use areas are, to some extent, in conflict with the primary state planning goal [§4302(c)] which is "to plan development so as to maintain the historic settlement pattern of compact village and urban centers separated by rural countryside." The challenge of this provision in Chelsea's case is that a substantial portion of Chelsea's village is located within or immediately adjacent to the mapped floodplain. Given the common inaccuracies of FEMA Flood Hazard Data (due primarily to age of data) and the topography of the village, it is possible that a larger portion of the village could be subject flood hazard damage during a severe hazard event.

If a Plan is to be approved by the Regional Planning Commission (which is optional) it must be deemed "consistent with the goals" of §4302. This requires "substantial progress" (defined in statute) toward attainment of the goals established in this section, unless the planning body determines that a particular goal is not relevant or attainable. If such a determination is made, the planning body shall identify the goal in the plan and describe the situation, explain why the goal is not relevant or attainable, and indicate what measures should be taken to mitigate any adverse effects of not making substantial progress toward that goal.

The Chelsea Planning Commission recognizes that the creation of the Mixed-Use Development Area may not be viewed as making "substantial progress toward" the goals of §4302. The Planning Commission clearly intends for Chelsea's Village to remain the cultural center of the community, but does not feel it is sensible planning to encourage further new development within the floodplain. The creation of these land use areas is an attempt to mitigate the adverse effects of potential flood hazards, increase the community's flood resiliency (which is consistent with §4382(a)(12)(A)(i) – Flood Resiliency) and allow for continued commercial growth in the community that is consistent with Chelsea's character. Regulatory tools will be utilized to ensure that development proposed in these land use areas does not encourage sprawl or strip development.

Goal

1. To encourage a strong and diverse local economy that provides satisfying and rewarding employment opportunities for residents while maintaining the community's rural character by providing locations in town where employers can locate that are outside of the Flood Hazard Area or potential flood hazard damages.

2. To increase the flood resiliency of Chelsea by encouraging new development in specifically identified areas outside of the Flood Hazard Area.

Policy

1. It is the policy of the town to support opportunities for local business owners to create businesses that provide employment to the citizens of Chelsea provided that they are developed in a manner consistent with the character of the community.

Recommendation

1. The Planning Commission should amend the Chelsea Zoning Bylaw to create a Mixed Use Development Area as described above, with the proper conditions and oversight that will ensure development is consistent and compatible with existing development.

XII. Transportation

Land use, energy, and transportation are related. Land use, both within and outside Chelsea's borders, drives the need for improvements to the transportation system. At the same time, local land use goals must be facilitated in part by providing the necessary transportation facilities to accommodate growth where growth is desired. In addition, a given land use can have very different impacts on the transportation system depending on how it is sited and designed. Land use and transportation are both linked to the town's economic well-being. Poorly planned land use patterns increase transportation costs and also the tax rate, whereas well planned development can add to the tax base of the town, providing additional funds for the transportation system.

A. Public Highway System

There are two types of public highways in Chelsea, state highways and town highways. VT Route 110 and VT Route 113 are the two state highways in Chelsea. While the Vermont Agency of Transportation (VTrans) retains ownership and maintenance responsibility for these highways, they are a critical link for Chelsea residents for all modes of transportations. It is important to the viability of the Town of Chelsea, especially our village, that these highways be maintained in acceptable condition and that the Town and State work closely together to consider the impact of these assets on the community.

Miles of Roads in Chelsea	
Class 1	0
Class 2	8.76
Class 3	51.54
Class 4	10.96
Total Town Roads	**70.99**

Figure 16: Miles of roads in Chelsea (*Source: Vtrans*)

Highway classifications determine the amount of state aid available to assist with repair and maintenance. VTrans and the Selectboard determine road classes for the town highways. Criteria include traffic volume, road condition and function. Class two highways are the major connectors linking villages with each other and with state highways, and they receive a higher rate of State aid than Class 3 highways.

Twelve percent (12%) of Chelsea's roads are Class 2. Class 3 highways are other town roads that are maintained in a manner enabling them to be driven under normal conditions in all seasons by a standard car. The majority (73%) of Chelsea's roads are Class 3. 15% of Chelsea’s highways are Class 4. Class 4 highways are generally in poor condition and are limited in maintenance due to their relative low level of use or seasonal nature. No state aid is available for work on Class 4 highways.

Class 4 roads, while not suited for regular traffic; do represent a valuable asset for the town from a recreation standpoint. Such town-owned corridors will help ensure that there will continue to be a place to enjoy snowmobiling, cross country skiing, walking, hunting, horseback riding and other outdoor recreation.

Apart from education, public roads have been and will continue to be Chelsea's largest town asset requiring significant financial investments paid through municipal taxes. Transportation funding sources come from numerous combinations of the local tax base, state and federal gas tax receipts, state and federal allocations and registration fees. The most significant funding source for large scale capital project comes from the federal transportation bill which passes through the State of Vermont and is distributed to towns by the Agency of Transportation. The federal and state government pays a percentage of project costs and in most cases there is a community share for the project. This funding applies only to Class 1-3 roads. Maintenance of Class 4 roads is funded exclusively by the community. The Two Rivers-Ottauquechee Regional Commission has compared programs throughout the region and recommends a program of early intervention using preventative maintenance, because such a program has proven to be 75-85% cheaper than larger reconstruction work after significant deterioration has occurred. Such a program should be a part of an adopted Capital Budget and Program.

The need to constantly maintain gravel roads can be exacerbated during severe weather events. While not all impacts can be controlled, but there are mitigation strategies that Chelsea can implement. Maintaining a reliable and up-to-date inventory of existing culverts and structures, coupled with a short and long range plan for replacement and upsizing is essential. Understanding the condition of culverts and bridges and of river/stream dynamics is critically important. Replacing deficient culverts and bridges considering water quality, potential for flood events, debris loading, river geomorphology, stormwater runoff, fish passage and erosion is critical to ensuring the stability of the highway system., . Considering these factors when upgrading culverts and bridges presents an opportunity to decrease the likelihood of failure during storm events. With increasing heavy rain events, resiliency of the transportation network is an important topic at the regional and state level and the Town of Chelsea needs to be prepared. The Bridges located on Route 110 at each end of the village are in serious disrepair. The southern bridge, which is adjacent to the school parking lot, blocks the line of sight to vehicles exiting. The bridge is also very narrow, forcing vehicles to pass too closely to the exit of the school lot. The northern bridge is also deteriorating; both bridges are showing holes in the decking.

B. Class 4 Roads & Trails

Class 4 roads and trails are an important asset to the community as they provide public access to some of the most rural places in Town. There are 6.7 miles of legal trails in Chelsea. They provide access to Town and conservation resources and provide unique insights into an agrarian landscape long abandoned. Many Class 4 roads have been incorporated into the natural landscape whereby very little development has occurred along these roads. Public utility services or other municipal infrastructure that typically accompany roads are limited. Often these corridors are scenic and area accessed primarily by hikers, bicyclists, snowmobilers, hunters and other forms of outdoor recreation.

Existing Class 4 roads and Legal trails represent a recreational asset for the community and should continue to be available to the public.

C. Development Review Road Standards

The Town currently uses highway rules and regulations based on state standards that were adopted by the Selectboard in March of 2011. This policy details road construction standards and policies for road

classifications, right-of-way, access, road acceptance, and numerous other construction and maintenance related activities. The responsibility of ordinance implementation rests with the Selectboard and the Chelsea Road crew.

Insofar as guidelines for zoning review can contribute to this process, the following planning considerations should continue or be expanded upon in future policy updates:

- Emergency management services will have guaranteed safe access to all development.
- Roads should be designed with multi-modal transportation safety (pedestrian, bicycle, etc.) in mind.
- Road design and construction should adhere to the relevant Town Plan goals and objectives - land use, natural resources and transportation elements.
- All roads will reflect a context-sensitive design that preserves and enhances the adjacent land uses and transportation system.
- The Town should adopt Accepted Private Road and Access Standards to ensure stormwater is not discharged onto public highways or drainage systems.

Major transportation projects often place a greater emphasis on contemporary engineering design standards. However, in some instances, the design and engineering of our roadways and bridges fail to consider the Town's unique historical and natural landscapes. The design of a transportation project should account for the character of the road and surrounding area. While engineering sufficiency criteria are important factors for road and bridge improvements, compatibility with existing and future development patterns also are important considerations.

D. Access Management

According to the Vermont Agency of Transportation (VTrans) definition, access management is a process that provides or manages access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity needs, and speed. Access management is an important process to provide reasonable accessibility to adjacent land uses while maintaining a safe and efficient flow of traffic.

Chelsea has an adopted access policy for private roads. The Town recognizes the value of access management and can implement access management strategies through its planning and public works related ordinances and policies.

The following are some of these strategies for all public and private transportation and development projects impacting local and state public roads as well as private roads:

- Utilize State of Vermont design standards for all temporary and permanent access, to include emphasis on drainage, sight distance, and access for emergency services;
- Encourage use of shared driveways and/or permitting access that may result in a future shared driveway;
- Consider reviewing access for existing development whenever a change of use, ownership, or other application process is brought before the Town;

- When practical, approve subdivisions with private and public road designs that allow shared access with other adjacent subdivisions and/or have the private rights-of-way reserved so an access may be built to connect to existing and future development;
- Appropriate sight-distance standards should be used.

E. Other Modes of Travel

Bicycles and Pedestrians

Many residents bike or walk on town roads in Chelsea. The rural nature of most of Chelsea's roads makes bike/ped travel outside of the village's system of sidewalks reasonably safe. Route 110 is considered a prime location for cycling due to the scenic nature of the valley. But, in some areas travel along route 110 is less safe due to higher traffic volume and speed and a lack of available shoulders.

Chelsea has 6.7 miles of legal trails, all of which can be used by the public for hiking. Additional recreational opportunities can be found using trails maintained by VAST.

The Village has a system of sidewalks that does not cover the entire village area, but provides excellent, safe mobility options where they exist. The Town recognizes that there are opportunities to improve and expand the existing system to provide a more extensive network of sidewalks that connect the larger pedestrian traffic generators. . When improvements to Route 110 are made within the Village, pedestrian access and connectivity should be considered.

Increasingly, bicycles are being used for many purposes, primarily recreational, but also for commuting. Given the rural nature of Chelsea, an opportunity exists for Chelsea to look forward and consider opportunities to develop/expand facilities for bicycle traffic. These opportunities may range from additional shoulder width or signing on existing roads to a bike path connecting Chelsea to other areas.

Public Transportation

Chelsea, like most Vermont towns, has limited public transportation. Stagecoach, Inc. is the nearest public transit provider. They have regular transportation to West Lebanon, NH and Montpelier, VT. However, the nearest access points for Stagecoach's transit lines are in Randolph or Sharon. Stagecoach does offer limited public transportation in the form of special requests for individuals who need transportation for medical reasons. Chelsea residents can take advantage of Stagecoach's "Ticket to Ride" Program which helps pay a substantial percentage of the cost of rides for senior citizens (60+) and persons with disabilities when there is not available transportation in the household or the person requesting the trips is unable to drive on the day of the trip. Ticket to Ride is available for a broad array of destinations, such as medical services, shopping, errands, and social purposes.

Given that Chelsea's elderly population is growing, the need for an affordable source of public transportation that can bring the elderly to major medical facilities like Dartmouth Hitchcock and larger commercial centers for day-to-day shopping needs is important.

F. Goals, Policies and Recommendations

Goals

1. To maintain the rural and scenic character of the back roads and byways thereby protecting the rural scenic quality of the town whenever possible.

2. To provide and maintain a safe, energy efficient, and cost effective transportation system integrating all modes of travel (auto, pedestrian, bicycle, and mass transit) and meeting the needs of the public in a manner consistent with the other goals, policies and recommendations of this Town Plan.
3. To provide a safe system for pedestrians to move about the village. This should include engaging town residents in a planning process to identify areas of most significant need.
4. To engage in a discussion regarding the need and associated opportunities for bicycle facilities.

Policies

1. It is the policy of the town to consider public input prior to a decision to substantially change the maintenance level, surface treatment, or class of a town road.

2. When determining which roads to pave and when, it is the policy of the town to evaluate traffic volume, safety and maintenance costs against other factors, such as the up-front cost of paving and base improvements that may be necessary to support a paved surface and the potential quality-of-life impacts to residents.

3. When addressing road improvements on Class 3 roads, particularly roads that are prone to flood or erosion damage during hazard events, it is the policy of the town to increase the size of culverts and bridges whenever feasible.

4. It is the policy of the town to integrate land use and transportation planning by encouraging concentrated growth in areas served by an adequate highway system.

5. It is the policy of the town to cooperate with other communities in the region through the TRORC and its Transportation Advisory Committee to ensure that the region's transportation system is developed in a well-coordinated manner that recognizes and balances the needs and desires of each community.

6. It is the policy of the town to consider the relationship of a road to surrounding features of the landscape when planning improvements needed to safely accommodate increasing traffic.

7. It is the policy of the town to retain Class 4 roads, trails, and other public rights-of-way as public resources.

8. It is the policy of the Town to support any efforts to expand the shoulders of Route 110 and Route 113.

9. It is the policy of the town to maintain a reliable and up-to-date inventory of existing culverts and structures, coupled with a short and long range plan for replacement and upsizing.

Recommendation

1. The Selectboard should develop a town highway capital plan and schedule that will guide maintenance and road infrastructure investments in the future.

2. The Town should conduct a planning process that considers possible multi-modal improvements in the Village Center that would enhance pedestrian connectivity and safety. Such processes should also consider public parking and bicycle facilities.

3. The Town should pursue opportunities to build a trail or bicycle network that would increase recreational opportunities in the community.

4. The Vermont Agency of Transportation should prioritize the replacement of the bridges on 110 at each end of the village.

XIII. Energy

A. Background

Concern about the sustainability of our nation's dependence on oil produced in foreign countries has grown greatly since the oil crisis of the mid 1970's. As prices of oil-related fuels continue to rise, everyday activities such as home heating and travel by car become increasingly burdensome for the average Chelsea resident.

While the Planning Commission recognizes that energy supply and demand are directed largely by economic forces at the state, federal, and international levels, the manner in which Chelsea plans for future growth can have an impact on how much energy is needed and used in this community. For example, a highly dispersed and unplanned pattern of land use can waste both land and energy resources. By planning the location of jobs, public services and housing in close proximity to growth centers, the consumption of fuel and the need for additional roads can be reduced. The siting and design of buildings and the selection of energy systems can influence efficient use and conservation of energy.

Theories such as the Hubbert Peak Theory (a.k.a. Peak Oil), suggest that at some point – perhaps sooner than later – the worldwide consumption of oil will outpace the existing supply. Although new technologies may enable energy providers to extract oil from locations that were previously impossible to reach, there is most likely a finite amount of oil, which means that Chelsea, like the rest of the world, should expect ever increasing costs of fossil fuels and should prepare for a much less oil-dependent future.

B. Energy Demands

According to the 2011 Vermont Comprehensive Energy Plan (CEP), energy demand grew at 1.8% from 1990 to 1999, but has been close to 0% for the past 10 years. The combination of state energy efficiency programs and the 2007–2009 recession probably helped to reduce energy demand across most end-use sectors in Vermont. The 2010 American Community Survey indicates that the major heating fuels consumed in Vermont are oil (47%), electric (5%), wood (15%) and LPG and gas (30%).

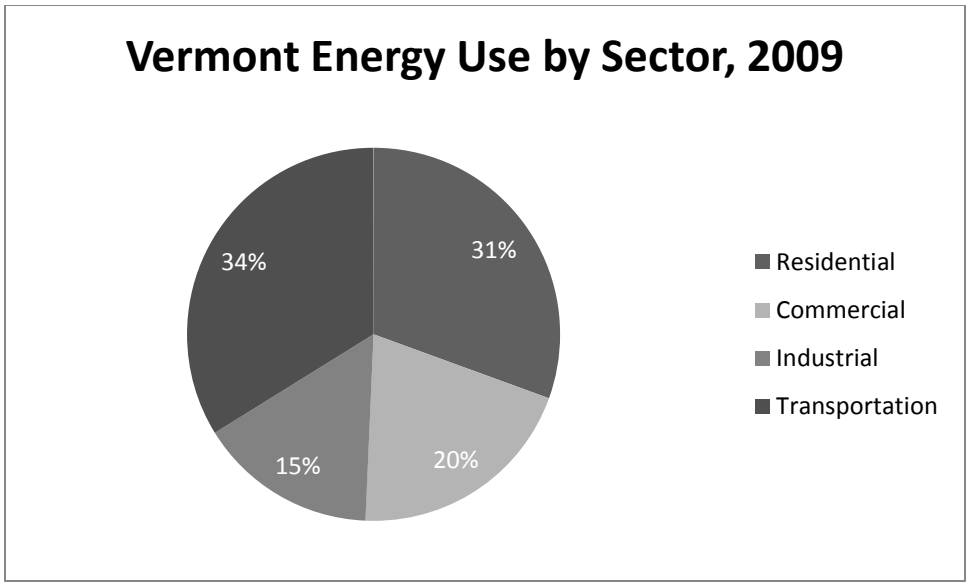


Figure 17: Source - US Energy Information Administration, 2009

In terms of per capita energy consumption for residential and transportation purposes, the North East is about the same as the rest of the U.S. In Vermont, almost 80% of residential energy is dedicated to space heating and domestic hot water, while approximately 34% of the state's total energy usage goes toward transportation.

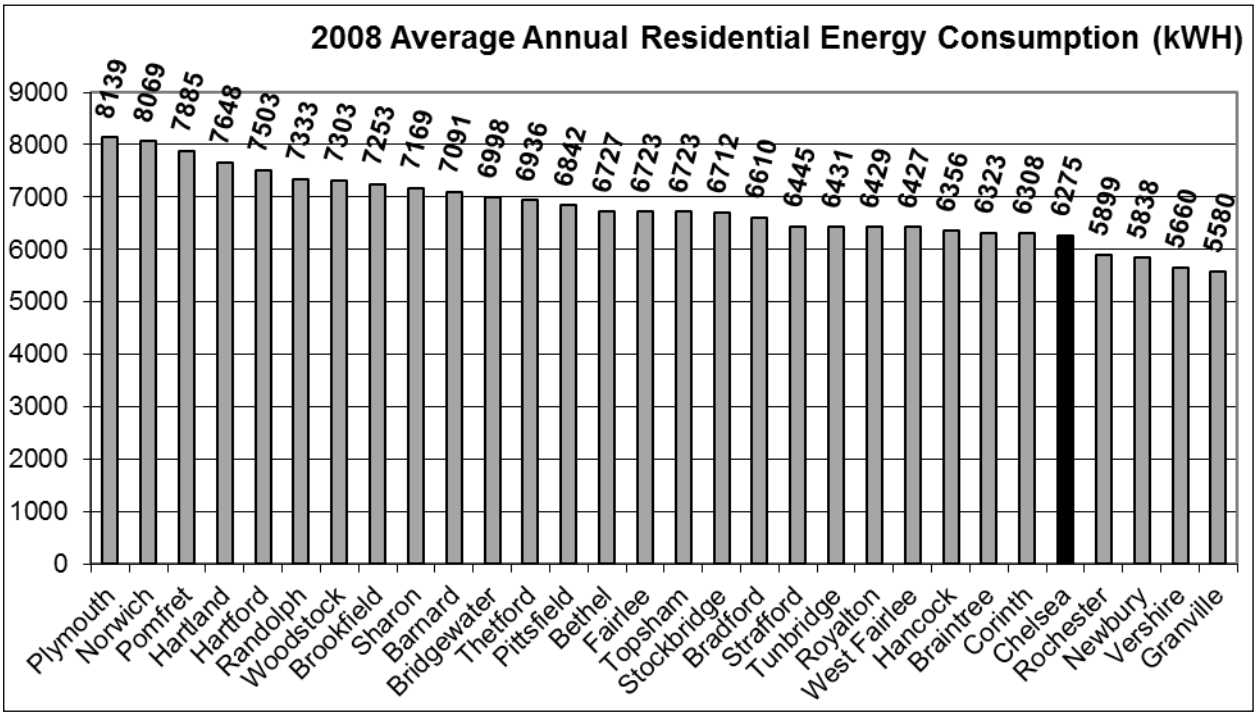


Figure 18 – Source: Vermont Energy Atlas and Efficiency Vermont, 2008

Of the energy dedicated to transportation, over 50% is used to fuel private cars for residents (as opposed to being used for public transit, road maintenance, or another public purpose). This fact reinforces the

need for clear policies that take into account the transportation implications of land use decisions in this community.

According to data collected by Efficiency Vermont in 2008, the town of Chelsea is twenty-sixth (out of 30 towns) in terms of average annual energy use levels in the TRORC region. In 2008, this data (limited only to residential energy use) determined that Chelsea used 6,275 kWh of energy, which is less than that used in most other towns in the Two Rivers-Ottauquechee Region. When compared to other communities of similar population size (such as Topsham, Braintree, Rochester, and Tunbridge), Chelsea appears to be using about the same amount of energy or less.

A. Current Energy Sources

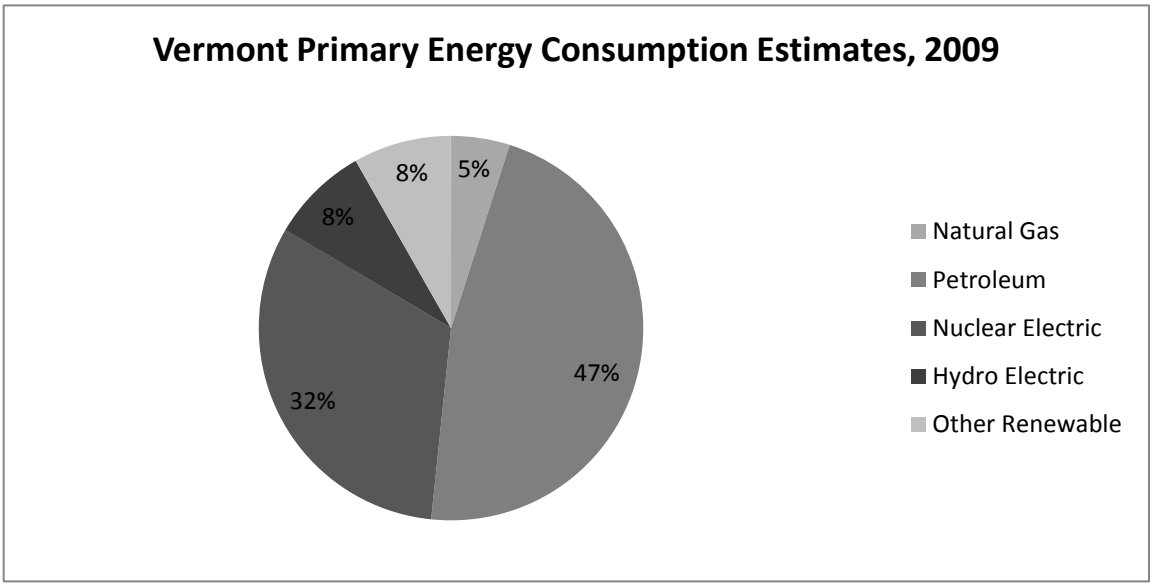


Figure 19: US Energy Information Administration, 2009

Fossil Fuels

Chelsea, like most other towns in Vermont, depends primarily on fossil fuels for heating and transportation. As shown in the table above, fossil fuels account for more than 50% of all energy consumed in Vermont, most of which is used in transportation. Nearly 50% of the oil consumed in the U.S. is imported. Vermont's economic system is so closely tied to the availability of fossil fuels that even modest price increases can lead to inflation, a slowdown in economic growth, and monetary instability. This can have unanticipated adverse impacts at the municipal and residential level. For example, increasing fuel prices make it more expensive for a town government to provide traditional public services and maintain existing facilities. Additionally, rising prices can also make it difficult for residents to heat their homes and put enough food on the table (the price and availability of food is usually influenced by oil prices).

But these consequences of intensive fossil fuel use are only part of the story. The combustion of fossil fuels has been determined to be the largest contributor of atmospheric "greenhouse gases" (primarily carbon dioxide). There is near consensus in the scientific community that continued accumulation of

greenhouse gases within the earth's atmosphere will lead to a warming of the atmosphere, or "greenhouse effect." Such warming can cause severe coastal flooding and unpredictable climate shifts, threatening the viability of the earth's most significant urban and agricultural centers. Vermont has experienced an increase in the number of severe weather events: in 2011, there were four federally declared disaster events, breaking the record for the most events in a single year. If, indeed, climate instability and climate change are linked, then it is essential that we decrease our reliance on fossil fuels in an attempt to reverse or at least halt future damage to our atmosphere.

Nuclear Energy

Vermont Yankee Nuclear Power Station has been generating electricity since 1971. The age of the facility has begun to manifest itself in terms of plant instability. Between 2009 and 2010, the Vermont Department of Health identified several ground water monitoring wells at the facility that contained tritium. This finding indicated an unintended release of radioactive material, and it means that other radioisotopes may have contaminated the environment. At the same time, Vermont Yankee's license to operate expired in March of 2012. This license extension request has been quite contentious, due in part to the previously mentioned tritium leaks, but also because the generation of electricity via nuclear fission remains controversial.

A properly maintained nuclear power facility can, to some extent, represent a cleaner form of energy production than fossil fuels. However, the mining, processing and disposal of nuclear materials continues to raise questions regarding the viability of nuclear energy; nuclear generated electricity produces various long-lived radioactive wastes which are highly toxic and require extraordinary precautions for safe storage. Existing technology does not assure safe disposal. The industry has not completely resolved safety issues regarding the decommissioning of nuclear power plants.

Renewable Energy

Vermont can successfully claim that a substantial amount of the power used statewide comes from renewable sources when compared to other states. Although the majority of Vermont's renewable energy is generated through Hydro-Quebec (see below), some hydroelectric power is generated in Vermont. Additional sources of renewable energy include several utility owned commercial-scale wind and landfill methane projects.

C. Renewable Energy Resources

For the municipality, individual or small group of homeowners, the key to sustainable energy production will be renewable sources of energy. The term "renewable energy" refers to the production of electricity and fuels from energy sources that are naturally and continually replenished, such as wind, solar power, geothermal (using the earth's heat to create power), hydropower, and various forms of biomass (trees,

crops, manure, etc.).

Although initial set-up costs for renewable energy generation systems can be high, these systems can save users money over the long term, and they reduce the consumption of carbon-based fuels, which helps to protect our environment and reduce our reliance on centralized energy. In Vermont, some of these energy sources are more readily available than others and some are more cost effective for the individual energy producer.

The types of renewable energy found in Vermont are:

Solar Energy

Solar energy has potential for providing clean, reliable, and safe energy, even in Vermont's climate. Most areas in Vermont have the potential for some solar energy production, at least at the residential scale. According the Vermont Energy Atlas, Chelsea, if all potential opportunities to develop solar energy production were taken advantage of, could generate roughly 969,569 kWh of power.

Passive Heating and Lighting – Good building and site design are essential to taking advantage of the sun's energy through passive methods. Chelsea could encourage use of solar in this fashion by drafting language for zoning bylaws and subdivision regulations that require the appropriate placement of buildings, landscaping and building design.

Water Heating – Solar water heating is the most common form of residential-scale solar use in Vermont. Solar systems are not regulated at the state level and are subject to local regulations. State statute forbids the creation of land use regulations that prohibit renewable energy generation.

Electricity Generation – Decreasing costs of equipment have made solar electric generation systems more prevalent. Solar systems are no longer utilized exclusively by "off-grid" buildings. The advent of net-metering allows buildings to be connected to the grid while utilizing renewable energy. Systems that are net-metered are overseen by the Public Service Board and are not required to get a local permit.

There are no commercial-scale solar electricity generation facilities in Chelsea. Because of the nature of solar arrays, they are in some ways more desirable than wind towers. This is primarily due to the fact that they do not need to be located on high ground and are therefore less visually prominent. In addition, these facilities can be located in areas that are less rural in nature, requiring fewer access roads and reducing adverse impacts on wild lands.

If not properly sited, large solar facilities can impact soil and water resources, as well as wildlife habitat and corridors. Considerations must also be given to public safety. Because photovoltaic collectors are reflective, they have the potential to create harsh and blinding lights that could be a hazard to nearby buildings or road traffic. Commercial solar facilities should be developed so as to avoid negative impacts on the rural character of the area in which they are proposed to be located. Developers should make all possible efforts to minimize damage to important natural areas as identified in the Natural Resources

section of this Plan. Additionally, such facilities should be located as close to existing roads as possible to avoid creating an increased need for town services, such as road maintenance.

Wind Energy

Power generated from wind is done through a wind turbine, which is installed on top of a tall tower, where it collects and converts wind into electricity. Towers for home use are generally 80-100 feet in height and are far less obtrusive than larger, commercial "wind farms" that have become a subject of great debate throughout Vermont.

Potential Wind Development Areas (Acres)	Class 1 (10-11 mph)	Class 2 (12-13 mph)	Class 3 (13-14 mph)	Class 4 (15-16 mph)	Class 5 (16-17 mph)	Class 6 (17-18 mph)	Class 7 (19-25 mph)
Residential (30-Meter)	10,691	667	0	0	0	0	0
Small Commercial (50 Meter)	0	1,440	741	167	0	0	0
Large Commercial (70-Meter)	0	0	28	417	54	0	0

Figure 20: Potential Wind Development Areas in Chelsea *(Source: Vermont Energy Atlas)*

Similar to solar, wind energy is an intermittent resource and its generation fluctuates in response to environmental conditions. The amount of energy produced by a specific wind tower can depend greatly on location, height of the tower and proximity to other obstructions. Nevertheless, most modern wind turbines (when properly sited) are able to generate electricity 95% of the time.

There are multiple levels of potential wind energy generation, ranging from Class 1 (10-11 mph) to Class 7 (19-25 mph). Chelsea's topography and distance from the more windy areas of the state, makes it a less than desirable location for commercial wind energy generation. At the residential level, however, generation possibilities are favorable. Based on an analysis of these potential areas for wind development, the community does not have to be concerned with the development of commercial-scale wind energy in town, but might want to select specific areas in the community that are culturally and naturally significant and identify them as areas that are not appropriate for wind energy generation.

Biomass & Biogas Energy Generation

The term 'biomass' refers to biologically-based feedstocks (that is, algae, food or vegetable wastes, grass, wood, methane, and more). Biomass can be converted into an energy source to fuel vehicles (e.g. biodiesel), heat homes, or even generate electricity. According to the 2011 Vermont Comprehensive Energy Plan, those using wood for primary heating consumed about 5.4 cords in 2007–2008, while those using wood as a supplementary source used 2.25 cords. In that same year, Vermont households burned about 20,155 tons of wood pellets, with primary-heat-source consumers burning 3.8 tons and supplementary-heat-source consumers burning 1.2 tons for the season. There are no biomass energy generation facilities in Chelsea. There has been interest in small-scale biomass energy generation at the Chelsea School. It would be possible to create a combined heat and power system using biomass energy

that could provide heat and power to the village. Chelsea would be supportive of community-scale biomass generation if it were appropriately located.

Commercial biomass energy generation facilities should be located close to available biofuels to reduce transportation impacts and costs. A biomass power plant would require a great deal of space to accommodate the various stages of collection and conversion of the mass into fuel before burning it to produce electricity. Water can also pose a problem as biomass facilities require large quantities to handle the recycling process of waste materials. Materials would have to be transported to and from the facility, so truck traffic should be a consideration in selecting a site. Emmissions from the buring process is also an important concern. Additionally, before a biomass energy generation facility is located in Chelsea, developers should prove that their proposed project will not negatively impact the rural character of the community or the local road system.

Biofuels

In addition to using biomass for heating, the use of biofuels, particularly biodiesel, is becoming an increasingly popular option for municipalities attempting to cut costs and reduce the environmental impacts associated with vehicle emissions.

According to the Vermont BioFuels Association, biodiesel is a clean burning alternative fuel, produced from domestic, renewable resources such as soybeans, sunflowers, canola, waste cooking oil, or animal fats. Biodiesel contains no petroleum, but it can be blended at any level with petroleum diesel to create a biodiesel blend which can be used in colder weather. It can be used in compression-ignition (diesel) engines or oil-fired boilers or furnaces with little or no modifications.

Growing biomass to use in biofuels may be a viable way to encourage farming in Chelsea as well; however, balance should be sought between growing for energy demands and for human and animal consumption.

Agriculture

The agricultural sector has the potential to become a net generator of energy by growing crops that can be used for biofuel, by contributing cow manure to the process of methane digestion (also known as ‘Cow Power’), or by using fields for the location of large-scale wind power (cows can graze up to the base of wind turbines).

Cow Power is especially popular in Vermont; however, it requires a significant upfront financial investment and is generally only effective when utilized by a large scale farm. One of the key advantages of methane digestion is that it reduces the amount of methane released into the environment. However, large-scale cow farms can also have adverse impacts on the environment, which should be carefully considered when weighing the benefits and drawbacks of setting up a methane digestion system in this community.

It is possible that a regional methane digester could be built on a smaller farm which could take manure from other small farms in the area as well as food scraps from towns in the same area.

Hydropower

Many locations in Vermont, including Chelsea, once depended on hydropower to grind grain, run mills and even supply electricity to homes. But, with the onset of centralized power, most of these small-scale power generation facilities have been replaced by massive hydro facilities such as Hydro Quebec.

There are two main forms of hydropower: run-of-river which uses the natural flow of water to generate power and facilities that store water behind an impoundment. Run-of-river systems rely on seasonal rainfall and runoff to produce power, resulting in periods of low production. Impounding water behind a dam allows for control of the water flow, resulting in consistent electric production.

There are no existing hydropower sites in Chelsea; however, according to the Vermont Energy Atlas, there are four potential hydro sites (the Chelsea Mill, Whitney, Reed Mill, and Bobbin Mill), all on the first branch of the White River.

Hydroelectric development necessitates balancing priorities. While the benefits of generating electricity from local renewable resources are evident, they are not without associated costs. The power output from a given stream must be moderated by environmental considerations. A minimum stream flow that is adequate to support aquatic life needs to be maintained and impoundments need to be designed with water quality, land use, and recreation considerations in mind.

Hydropower generating facilities are regulated by the Federal Energy Regulatory Commission and stringent federal water quality standards. As a result, the regulatory process for hydro facilities is extensive and time consuming. Further, streams are public trust resources and the potential impacts of hydro projects warrant significant consideration. Any hydropower development proposed in Chelsea shall not result in an undue adverse impact to riverine ecosystems and water quality.

D. Permitting Considerations

Energy generation in Vermont is subject to a number of different permitting requirements, most of which are limited to state level permitting. On the municipal level, 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 as well as 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 Plan address these land uses and provide guidance to town officials, regulators, and utilities.

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

1. **Preferred Locations**: New generation and transmission facilities shall be sited in locations that reinforce Chelsea's traditional patterns of growth.

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 (except as required for hydro facilities)
   - Fluvial erosion hazard areas shown on Fluvial Erosion Hazard Area maps (except as required for hydro facilities)
   - Wetlands as indicated on Vermont State Wetlands Inventory maps.
   - Rare, threatened or endangered species habitat or communities.

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.
   - 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 (except as required for hydro facilities)
   - 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. Unnecessary site clearing and highly visible roadways can have greater visual impacts than the energy generation facility itself. In planning for facilities, designers should take steps to mitigate their impact on natural, scenic and historic resources and improve the harmony with their surroundings.

K. Residential Energy Efficiency

There are a number of ways that the Town of Chelsea can meet its local energy demand, first by lowering that demand, and then by working to meet the remaining need with local, untapped energy resources.

Decreasing Energy Use by Changing Behavior

Raising awareness to replace wasteful energy behaviors with energy saving ones can reduce the strain on existing energy resources, and help residents and businesses save money, making the town a more affordable place to live with a higher quality of life.

Decreasing Energy Use by Implementing Energy Efficiency

For those necessary or desired services that require energy, we can apply the principles of energy efficiency to ensure that we use less energy to provide the same level and quality of service. Examples include:

- Air sealing with caulk or contractor's foam,
- Insulating with high R-value (or heat flow resistance) material,
- Using high efficiency windows,
- Installing energy efficient appliances like refrigerators, freezers, front loading washing machines, gas heated clothes driers and heating systems without blowers,
- Using high efficiency lighting,
- Using gas and/or solar hot water heaters,
- Siting buildings to make use of existing wind blocks and natural cooling patterns derived from the landscape's topography.
- Siting buildings with maximum southern exposure to capture passive solar energy.

Homeowners can access rebates and some tax credits for energy efficiency improvements through Efficiency Vermont.

New residential development in the State of Vermont is required to comply with Vermont Residential Building Energy Standards (RBES). Commercial development is subject to similar code regulations. Some examples of the types of development the RBES applies to include:

- Detached one- and two-family dwellings;
- Multi-family and other residential buildings three stories or fewer in height;
- Additions, alterations, renovations and repairs;
- Factory-built modular homes (not including mobile homes).

In order to comply with the RBES, a home, as built, must meet all of the Basic Requirements and the Performance Requirements for one of several possible compliance methods. If the home meets the technical requirements of the RBES, a Vermont Residential Building Energy Standards Certificate must be completed, filed with the Town Clerk and posted in the home. If a home required by law to meet the RBES does not comply, a homeowner may seek damages in court against the builder.

E. Municipal Role in Energy Efficiency

Although communities are unlikely to have an impact on energy consumption at the global level, they do have an impact at the local level given their demand for and use of energy. The relationship between a municipality and its energy use creates opportunities to have an impact on local energy use reduction.

Chelsea Energy Committee

Chelsea has an Energy Committee (EC), which acts as an advisory board to the Selectboard and Planning Commission (PC) on all things energy related. The Chelsea EC is a volunteer group that was appointed by the Selectboard for the purpose of establishing and implementing the town's energy goals. Chelsea's EC is very active, their work includes conducting energy audits on municipal buildings, tracking energy use for these buildings, and working with the PC on the Energy Plan.

Auditing Municipally Owned Buildings

Many towns in Vermont own buildings that are old and inefficient in many respects. For instance, older buildings often have insufficient insulation, wasteful heating and cooling systems, and out-of-date lighting. These kinds of infrastructure problems result in higher energy use with the resulting cost passed onto taxpayers.

The Chelsea Energy Committee audited the Chelsea Town hall and Offices in 2008. Over the following three years, grant funding was used to implement the audit's recommendations. An was also conducted on the Chelsea School building in 2012. For more information on the results of the audit see the Utilities/Facilities chapter of the Plan. Municipal officials should consider conducting audits on additional town buildings in order to determine what improvements are necessary, and which projects would have the highest cost-benefit ratio in terms of energy and financial savings. In 2012, the Chelsea

Energy Committee also conducted an audit of its street lighting system which resulted in the removal of a number of streetlights.

Property Assessed Clean Energy (PACE)

Vermont enacted legislation in May 2009 (Act 45) that authorizes local governments to create Clean Energy Assessment districts. Once created, municipalities can offer financing to property owners for renewable energy and energy-efficiency projects. Eligible projects include the installation of solar water and space heating, photovoltaic panels (PV), and biomass heating, small wind, and micro-hydroelectric systems. Property-Assessed Clean Energy (PACE) financing effectively allows property owners to borrow money to pay for energy improvements. The amount borrowed is typically repaid via a special assessment on the property over a period of up to 20 years; if the property owner wishes to sell the parcel before fully repaying the obligation, then the obligation is transferred to the new property owner at the time of sale. At this time Chelsea has not created a PACE district.

Capital Budget Planning

Given the potential expense of energy efficiency improvements, it is essential to wisely budget town funding to cover these costs. State statute enables communities to create a Capital Budget and Program for the purposes of planning and investing in long-range capital planning. Although most communities have some form of capital account where they save money, many do not have a true Capital Budget and Program. A capital budget outlines the capital projects that are to be undertaken in the coming fiscal years over a five-year period. It includes estimated costs and a proposed method of financing those costs. Also outlined in the Program is an indication of priority of need and the order in which these investments will be made. Any Capital Budget and Program must be consistent with the Town Plan and shall include an analysis of what effect capital investments might have on the operating costs of the community.

When planning for routine major facility investments, such as roof replacements, foundation repairs, etc., it is important to consider making energy efficiency improvements simultaneously. The cost to replace or renovate a community facility will only be slightly higher if energy efficiency improvements are done at the same time, rather than on their own.

At present, the town of Chelsea does not have an adopted Capital Budget and Program to help guide investments in community infrastructure and equipment. The Planning Commission may make recommendations to the Selectboard with regard to what capital investments should be considered annually. Chelsea should strongly consider creating a Capital Budget and Program.

Policy Making for Change

In addition to reducing the energy use related to facilities, Chelsea can implement policies that lower energy use by town staff or encourage greater energy efficiency. Examples include:

Energy Efficient Purchasing policy – A policy of this nature would require energy efficiency to be considered when purchasing or planning for other town investments. For example, purchasing Energy Star rated equipment is a well-documented way to increase energy efficiency. Devices carrying the Energy Star logo, such as computer products and peripherals, kitchen appliances, buildings and other products, generally use 20%–30% less energy than required by federal standards.

Staff Policies - Towns can also implement policies that are designed to reduce wasteful energy practices. For example, the Town of Chelsea could create a policy requiring that town vehicles (such as dump trucks and other road maintenance equipment) not idle for more than a set period of time. Idling is an expensive waste of fuel, and a policy such as this could lead to substantial savings in money spent on fuel by the town.

Through policy making, local government can set a clear example for townspeople and encourage sustainable behavior that will ultimately result in both energy and financial savings. Please see the goals, policies, and recommendations section (F, below) for more ideas.

L. Energy and Land Use Policy

The Vermont Municipal and Regional Planning and Development Act (24 V.S.A. Chapter 117) does not allow communities to impose land use regulations that prohibit or has the effect of prohibiting the installation of solar collectors or other renewable energy devices. However, statute does enable Vermont's municipalities to adopt regulatory bylaws (such as zoning and subdivision ordinances) to implement the energy provisions contained in their town plan.

Zoning bylaws control the type and density of development. It is important to acknowledge connection between land use, transportation and energy and seek to create zoning ordinances and subdivision regulations that encourage energy efficiency and conservation. Encouraging high density and diverse uses in and around existing built-up areas will lead to more compact settlement patterns, thereby minimizing travel requirements. At the same time, zoning bylaws must be flexible enough to recognize and allow for the emergence of technological advancements which encourage decreased energy consumption, such as increased use of solar and wind power.

Chelsea’s zoning bylaws contain provisions for planned unit developments (PUDs). PUDs are a grouping of mixed use or residential structures, pre-planned and developed on a single parcel of land. The setback frontage and density requirements of the zoning district may be varied, to allow creative and energy efficient design (i.e. east-west orientation of roads to encourage southern exposure of structures, solar access protection, use of land forms or vegetation for wind breaks, and attached structures), and to encourage the construction of energy efficient buildings.

Subdivision regulations are one of the most effective tools for encouraging energy efficiency and conservation. Subdivision regulations, like PUDs, involve town review (through the PC, ZBA or DRB) in the design process. Because subdivision regulations govern the creation of new building lots, as well as the provision of access and other facilities and services to those lots, a community can impose requirements that a developer site their building to maximize solar gain. Likewise, subdivision can require that landscaping be utilized to reduce thermal loss.

M. Energy and Transportation Policy

It is important that communities recognize the clear connection between land use patterns, transportation and energy use. Most communities encourage the development of residences in rural areas, and these are in fact coveted locations to develop because of the aesthetics that make Vermont special. However, this rural development requires most of our population to drive to reach schools, work and services.

Because transportation is such a substantial portion of local energy use, it is in the interest of the community to encourage any new developments that are proposed in Chelsea to locate adjacent to existing roads. In particular dense residential developments should be located within designated growth areas. Commercial development that requires trucking and freight handling should only locate on roads which can effectively handle the size of vehicle needed.

F. Goals, Policies and Recommendations

Goals

1. To identify and limit the adverse impacts of energy development and use on public health, safety and welfare, the town's historic and planned pattern of development, environmentally sensitive areas, and our most highly valued natural, cultural and scenic resources, consistent with related development, resource protection and land conservation policies included elsewhere in this plan.

2. To encourage a continued pattern of settlement and land use that is energy efficient.

3. To promote the construction of energy efficient residential and commercial buildings and increase awareness and use of energy conservation practices through educational outreach to the public.
4. To increase public transportation opportunities throughout the community, including park-and-ride access, bus service, biking paths, and sidewalks.

5. To promote greater use of existing public transportation services by community members.

Policies

1. Town officials should actively support partnerships and strategies, that will ensure the affordable, reliable and sustainable production and delivery of electrical power to the region, in conformance with regional and municipal goals and objectives.

2. Town officials will participate in the Public Service Board’s review of new and expanded generation and transmission facilities to ensure that local energy, resource conservation and development objectives are identified and considered in future utility development.

3. Any commercial energy generation or transmission facility proposed in Chelsea must be developed so as to avoid negative impacts on the rural character of the surrounding area. Developers should make all possible efforts to minimize damage to important natural areas as identified in the Natural Resource section of this Town Plan. Additionally, such facilities should be located as close to existing roads as possible to avoid any increase in the services provided by

the town.

4. Developments that are proposed under Act 250 should include measures to reduce energy consumption through site and building design, materials selection and the use of energy-efficient lighting, heating, venting and air conditioning systems.

5. Chelsea supports the development and use of renewable energy resources – including but not limited to wind, solar, biomass, micro hydro and cogeneration – at a scale that is sustainable, that enhances energy system capacity and security, that promotes cleaner, more affordable energy technologies, that increases the energy options available locally, and that avoids undue adverse impacts of energy development on the local community and environment.

6. Town officials may work in cooperation with state, regional and local agencies, emergency service providers, regional suppliers and municipalities to develop local emergency contingency plans that ensure access to critical energy supplies and measures to reduce nonessential energy consumption in the event of an abrupt energy shortage.

7. Town officials including the Energy Committee, should support efforts to educate homeowners about what resources are available to them for energy efficiency improvements.

Recommendations

1. The Chelsea Energy Committee should continue their efforts to increase public awareness and use of energy conservation practices, energy-efficient products and efficiency and weatherization programs through educational efforts aimed at local residents and businesses.

2. The Chelsea Energy Committee should evaluate municipal or community-based renewable energy generation, to include municipal or district biomass heating systems, and the installation of individual or group net metered generation facilities on town buildings and property to serve town facilities. Sources of funding for municipal power generation may include third-party financing, municipal funds, bonds, grants, and available government incentive programs.

3. The Planning Commission should identify areas in town that are appropriate for large scale energy production such as wind, solar and biomass.

4. The Chelsea Energy Committee should continue to track municipal energy use and costs (for example: through the EPA's free Energy Star® Portfolio Manager program), and develop an overall energy budget to manage the town's energy consumption, which may also include the development of local generating capacity.

5. The Town should implement energy efficiency measures for existing and future facilities as opportunities arise, and incorporate priority efficiency improvements (e.g., facility retrofits, renovations, and equipment upgrades) in a town's capital budget and program.

6. The Town should consider the benefits and/or drawbacks of using regionally available alternative-fuels, such as biodiesel, in municipal vehicles.

XIV. Relationship to Other Plans

A. Relationship to Municipal Plans

The Municipal Plan focuses primarily on development and policy within the community's boundaries. However, it is important to recognize that how a community grows and changes can be directly impacted by development that takes place outside of the community. For example, many places had large and vibrant villages that were negatively impacted by the location of the railroad in outside areas.

In order to analyze the potential for outside impacts on Chelsea, the Planning Commission has reviewed the Municipal Plans and, if available, the land use regulations of surrounding towns for consistency with this Plan. These communities include:

- Brookfield– The Town of Brookfield has been actively planning since the early 1990's. Land use in Brookfield is guided by subdivision regulations (revised in 2005) and a zoning bylaw (revised in 2010). The pattern of development for land in Brookfield which abuts Cheslea is primarily rural/agricultural in nature, with some areas identified as more appropriate for conservation. There are no conflicts between the Brookfield Town Plan and the Chelsea Town Plan.

- Tunbridge – Tunbridge has a Town Plan (revised in 2012) and a Flood Hazard Bylaw. Tunbridge identifies Route 110 as a visually significant corridor and has included strict language in their Plan that would require developers under Act 250 to design proposals in such a fashion that they protect the scenic quality of the corridor. The only potential for conflict between Tunbridge and Chelsea is the Industrial Area located adjacent to Tunbridge on the West side of Route 110. Because the valley becomes tight and hilly in this area, Industrial development in Chelsea is unlikely to have a visual impact on Route 110 in Tunbridge.

- Vershire – The Town of Vershire maintains a Town Plan (revised in 2011), Zoning (revised in 2008) and a Flood Hazard Bylaw. Chelsea and Vershire share access to Route 113, which is the primary east/west corridor for the area. Vershire's pattern of development in areas adjacent to Chelsea is primarily rural residential with some conservation areas as well. When Chelsea implements the Mixed Use Development Area, which is located along Route 113 abutting Vershire, it is possible that some conflict between land uses could arise. Chelsea's Planning Commission will have to craft zoning regulations that allow for conditions that will minimize the potential for visual and other impacts on neighboring residences in Vershire.

- Washington – The Town of Washington has a municipal plan and a recently adopted zoning ordinance. Washington's land use plan is very limited in scope with the majority of the lands that abut Chelsea being designated generally as Rural Residential, which is consistent with the Chelsea land use plan.

- Williamstown – The Town of Williamstown has a Town Plan, but no zoning or subdivision regulations. Williamstown abuts Chelsea in areas that are primarily rural in nature, as such, the

pattern of development for land in Williamstown which abuts Cheslea is primarily rural/agricultural in nature, with some areas identified as more appropriate for conservation. There are no conflicts between the Williamstown and Chelsea Town Plans.

B. Relationship to the Regional Plan

Chelsea is within the Two Rivers - Ottauquechee Regional Commission. It is one of thirty (30) municipalities that comprise the Region. The Region covers northern Windsor County, most of Orange County and the Towns of Pittsfield, Hancock and Granville. The Commission was chartered in 1970 by the acts of its constituent towns. All towns are members of the Commission, and town representatives govern its affairs. One of the Regional Commission's primary purposes is to provide technical services to town officials and to undertake a regional planning program. As is the case in many areas of the State, the extent of local planning throughout the region is varied. Some municipalities are more active than others. Thus, the level of services to each of the towns changes with time.

The Regional Commission most recently adopted its Regional Plan in June, 2012. It will remain in effect for a period of five years. This Plan was developed to reflect the general planning goals and policies expressed in the local plans. It is an official policy statement on growth and development of the Region. The Regional Plan contains several hundred policies to guide future public and private development in the Region. Policies for land use settlement are identified. These areas are: Town Centers, Village Settlement Areas, Hamlet Areas, Rural Area, and Conservation and Resource Areas. Delineation of each land use area is mapped or charted.

C. Goals, Policies and Recommendations

Goal

1. To work with neighboring towns and the region to encourage good land use and environmental policy that benefits the citizens of Chelsea.

Policies

1. To encourage continued communication and cooperation between Chelsea and its neighboring towns.

2. To continue participation in the Two Rivers Ottauquechee Regional Commission.

3. To exchange planning information and development data with neighboring communities.

XV. Town Plan Implementation

Title 24, Chapter 117, §4382(7) requires a Town Plan to contain a "recommended program for the implementation of the objectives of the development plan". While it is not required by law that communities implement any of the policies or recommendations in a municipal plan, it is important to recognize that in order to meet the vision of the Plan, it must be implemented wherever possible.

Implementation can be approached in multiple ways some regulatory and some non-regulatory, they include (but are not limited to) the following:

Regulatory	Non-Regulatory
Zoning & Subdivision Ordinances	Design a Capital Budget & Program
Strengthening Town Plan language to clearly influence Act 250 proceedings (use of direct language, such as "shall")	Advisory Committees (i.e. Conservation Commissions or Energy Committees)
Official Map	Tax Increment Financing
Access Permits - Town Highways Only (Selectboard)	Education/Outreach on important issues
Flood Regulations & National Flood Insurance Program	Purchase or acceptance of development rights

A. Regulatory Implementation

Regulation of land use and development through rules adopted by the voters is one possible method of Plan implementation. Because these regulations are susceptible to legal challenge and must clearly benefit the public, discretion must be used. Well recognized and utilized means include, but are not limited to, zoning bylaws and subdivision regulations. Examples of potential implementation tools include:

Zoning Bylaws

Zoning bylaws are a commonly used method for guiding development at the local level. Zoning may regulate:

- Uses of land,
- The placement of buildings on lots,
- The relationship of buildings to open space, and
- The provision of parking, signs, landscaping and open space.

Chelsea has a zoning bylaw which establishes districts or zones that have a different set of uses, densities, and other standards for development. Zoning districts must be reasonably consistent with the Town Plan, and it is the responsibility of the Planning Commission to implement any changes to zoning that are proposed in this Plan. As an alternative to conventional methods, Chelsea could opt to implement a set of

measurable performance standards for specific uses as opposed to dividing the Town into districts. This technique, referred to as "performance zoning", is designed to be more flexible and to recognize the specific conditions of each site proposed for development.

Subdivision Regulations

Subdivision regulations govern the division of parcels of land and the creation of roads and other public improvements. Furthermore, subdivision regulations can ensure that land development reflects land capability and that critical open spaces and resources are protected from poor design or layout. Chelsea does not have Subdivision regulations.

Flood Hazard Bylaws

Under Vermont law [24 V.S.A., Section 4412], the Town of Chelsea is able to regulate the use of land in a defined flood hazard area adjacent to streams and ponds. These bylaws have been established to ensure that design and construction activities within the limits of the 100 Year Flood Plain are designed so as to minimize potential for flood damage and to maintain use of agricultural land in flood-prone areas. As noted in the Natural Resources section of this Plan, property owners are eligible for federal flood insurance on buildings and structures at relatively low federally subsidized premium rates. However, such insurance cannot be obtained for properties in Chelsea unless the Town has in effect a Flood Hazard Bylaw which, at present, Chelsea has. The strengthening of Chelsea's Flood Hazard Bylaws has been suggested in this Plan.

Act 250

Since 1970, Vermont has had in place a statewide review system for major developments and subdivisions of land. Exactly what constitutes a "development" or "subdivision" is subject to a rather large and involved set of definitions. However, generally, commercial and industrial projects on more than one acre of land; construction of 10 or more units of housing; subdivision of land into 6 or more lots; construction of a telecommunication tower over 20 feet in height; and development over 2,500 feet in elevation qualifies.

Prior to these activities being commenced, a permit must first be granted by the District Environmental Commission. In determining whether to grant a permit, the Commission shall evaluate the project in relation to ten specific review criteria.

These criteria relate to the environmental, economic, and social impacts of the proposed project on the community and region. Parties to Act 250 proceedings include Chelsea, through the Planning Commission and Selectboard, the State, and the Regional Commission. One criterion that needs to be addressed is whether the project is in conformance with the Chelsea Town Plan. If a project were determined not to be in conformance with the plan, the District Environmental Commission would have a basis to deny a permit. As such, Act 250 reviews can take into consideration protection of those types of resources considered important to the well-being of the community. Accordingly, it is in the interest of the Town to evaluate Act 250 projects affecting Chelsea and to offer testimony, as appropriate.

For a Town Plan to be given serious weight under Act 250, the Plan must contain specific and

unambiguous language. If a community is serious that a policy be recognized by the District Environmental Commission during Act 250 review, it must use firm language such as “shall” or “must” instead of “should” or “could”. The Planning Commission has been selective about where strong language is used in policy throughout this document, as it is important to recognize that the Town Plan should have some flexibility. In instances where flexibility was not wanted, the Planning Commission wrote policy with appropriately strong language.

Highway Ordinances

Chelsea has in effect a Highway Ordinance setting forth the standards and conditions for the maintenance, improvement, discontinuance, laying out and acceptance of Town highways. In addition, the ordinance includes provisions related to the reclassification of town highways (Classes 2, 3 and 4).

Lastly, Chelsea does have, through its Selectboard, the ability to regulate the siting of private access to municipal roads through the issuance of "curb cut" permits to landowners. "Curb cuts" are places where a private driveway or road connects to a town highway. In granting a cut onto town roads, the Selectboard can give consideration to safety issues such as adequacy of sight distance and proximity to intersections as well as conformance with this Plan.

B. Non-Regulatory Implementation

Capital Budget & Program

The creation of a capital budget and program has been discussed in several chapters of this Plan. A capital budget and program is a financing approach that benefits the town greatly in the selection, prioritization and costing of capital projects. Under the capital budget, a project is selected (e.g. bridge refurbishment), a funding source determined (e.g. general taxes, and general obligation bonds) and a priority year given for each activity (e.g. construction in 2006). Collectively these capital projects make clear when public facilities will be placed to accommodate projected growth. When used in conjunction with the Town Plan and local bylaws, it can be a powerful mechanism for limiting the rate of growth in accordance with the fiscal capacity of taxpayers and other funding sources.

In addition, it is noted that under Vermont's Act 250 law, in granting a Land Use Permit for a major development or subdivision, the District Environmental Commission must first find that the project is in conformance with the town's capital budget. [See 10 V.S.A., Section 6086(a)(10).] Accordingly, this mechanism gives the town an indirect method of implementing its policies and priorities as set forth in the Plan.

While both Chelsea has an informal system of capital programming, it is recommended that a Capital Budget Committee be established to work with the Select Board and Planning Commission in the development of a list of capital needs and expenditures, and to formally present a Capital Budget and Program for adoption.

Advisory Committees

State statute authorizes a community, by vote of the Selectboard, to create advisory committees. These committees can have differing roles, some provide advice to the Planning Commission or Zoning Board of Adjustment regarding development (for example, a historic review committee as part of a design review district), but more often advisory committees are created to focus on a specific topic in the Plan. The most common advisory committees are the Conservation Commission and the Energy Committee. These groups (outlined in the Natural Resources and Energy chapters respectively) can assist the Planning Commission with the creation of policy, but they can also act as the primary source of outreach and education relating to their primary focus point. Chelsea has one advisory commission: the Energy Committee.

Coordination of Private Actions

Citizens and private enterprise have a vested interest in the well-being of Chelsea. The actions of the private sector, such as the construction of homes and businesses, land conservation, and the use of land for recreation and agriculture, should relate positively to the goals and policies as set forth in this Plan.

It is in the interest of Chelsea, through the Planning Commission and Selectboard, to develop a cooperative relationship with private investment activities that may have a significant impact on the community values and policies set forth in the Plan. By working together in a cooperative venture early in the process of planning for a project, an adversarial relationship can be avoided. Contacts that should be maintained include the following:

- Green Mountain Economic Development Corporation
- Vermont Land Trust and Upper Valley Land Trust
- Twin State Housing Trust
- Owners of significant properties of high resource or development value, and
- Major employers in Chelsea.

Conservation Activities

Conservation programs are an effective means of securing protection of valuable farm and forestland or significant natural resources. Techniques available involve voluntary direct work between non-profit conservation organizations and affected landowners such as donation of conservation easements, bargain sales of land, and limited development schemes.

The land trust movement has grown immensely during the past twenty years, particularly in Vermont. Land trusts offer viable means of bringing together the needs of property owners with the community interests. The Vermont Land Trust and the Nature Conservancy are particularly well-recognized organizations. Several organizations are also involved in water quality protection. It is the intent of this Plan to implement its policies through coordination and the involvement of these organizations and others dedicated to public purposes.

Vermont Community Development Program

Since the mid-1970's, the Vermont Community Development Program (VCDP) has made grant funds available to towns for community projects. Historically, the major focus of the program has been on housing rehabilitation and affordable housing projects benefiting low and moderate-income families.

Chelsea should investigate the Vermont Community Development Program and its potential to assist the community in addressing its housing needs. The Regional Commission and the Vermont Agency of Commerce and Community Development are resources available to assist.

C. Responsibility for Implementation

In order to ensure that the policies of this Plan are implemented, it is essential to identify what Municipal Panel, Organization or Citizen is most suited to act on them. Throughout this Plan, the Planning Commission has identified recommendations for action and indicated who should be responsible for them. Generally, responsibility for implementation of the Plan falls to either the Planning Commission (in the case of implementing changes to land use regulations) or the Selectboard (in the case of implementing municipal policy). However, advisory committees as well as other community organizations could also have responsibilities for implementation.

In addition to assigning responsibility, the Planning Commission should also keep track of progress made toward implementing the goals, policies and recommendations of this Plan. This information will be useful to identify areas where additional effort needs to be applied to achieve implementation. It can also be used to describe how successful the community has been at implementation in the next iteration of this Plan, and to guide future policy.

In order to track the progress of implementation, the Planning Commission has included a chart that identifies the policy or recommendation, the responsible party and the progress. See appendix A.