Tunbridge Town Plan

Adopted by the Tunbridge Select Board
10/17/07

Prepared by the Tunbridge Planning Commission

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With assistance from the Two Rivers-Ottauquechee Regional Commission and a grant from the Department of Housing and Community Affairs

Fellow residents of Tunbridge:

What follows is the most recent update of the Tunbridge Town Plan. This culminates a lengthy process begun back in fall of 2003. It represents the concerted efforts of not just us, your Planning Commission, but also you, the people who live in Tunbridge.

The first Tunbridge Town Plan was written in 1988, the year the Tunbridge Planning Commission was formed. That plan served as the template for the following three plans written in 1993, 1998, and 2003. In 2003, the Planning Commission realized the need for a more comprehensive plan based on a changing landscape, both physically and figuratively. Population increases in the Upper Valley, as well as changes in agriculture, real estate values, and work and community patterns, have all played their part in redefining the Tunbridge community. Additionally, the population of Tunbridge, like that of the rest of Vermont, is changing, with fewer young people settling or staying in town and people later along in life moving here for a certain quality of life. As development pressures began knocking at Tunbridge's door, it became clear that as a town, we needed to discuss what we want Tunbridge to look like, how we want it to grow, and what our children will inherit.

In January of 2004, the Town was awarded a $12,000 Municipal Planning Grant from the Vermont Department of Housing and Community Affairs to help fund a Town Plan rewrite. The Town secured this grant with assistance of the Two Rivers-Ottauquechee Regional Commission (TRORC). Most of the award was to pay for technical assistance from TRORC, who partnered with the Planning Commission to write this document and helped meet the criteria specified by the State. A portion of the grant, however, went towards designing and conducting a town-wide Agricultural Survey, led by Dan Rudell of the Planning Commission. Another portion of the grant went to facilitating a series of public meetings held in the Spring and Fall of 2004.

We on the Planning Commission were overwhelmed by the attendance and participation of so many people at the meetings. The high quality of the input, as well as the level of concern you showed, inspired us in our work on the Plan. We are very grateful to all who participated, and we hope this document reflects the fruit of those meetings. This kind of community involvement in the town plan process is part of what makes Tunbridge the place we choose to live.

The document that has resulted is considerably longer and more detailed than previous plans. This is for a number of reasons. At this time, Tunbridge neither has zoning nor is proposing zoning. Thus the Town must rely on the Act 250 process for any development control. Because town plans play a role in this process, we wanted one that would provide sufficient and specific guidance. We also added sections to address new challenges faced by towns as competition for natural resources, energy resources, and housing has increased. Finally, in response to the overwhelming participation of townspeople, we have tried to address all the concerns shared at the town-wide meetings.

In sum, this revision could not have happened without the hard work of Tunbridge residents. Again, we are grateful for that. If we do not plan as a community, we can be sure that others will make plans for us. This Plan is just one tool, one step in the Town's work to plan as a community and to shape its future.

Respectfully,
The Tunbridge Planning Commission

Planning is a process of choosing among those many options.

If we do not choose to plan, then we choose to have others plan for us.

~ Richard J. Winwood

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"Would you tell me which way I ought to go from here?" asked Alice.

"That depends a good deal on where you want to get," said the Cat.

"I really don't care where" replied Alice.

"Then it doesn't much matter which way you go," said the Cat.

~ Lewis Carroll ,*Alice's Adventures in Wonderland (1865)*

I. Introduction

A. The Process of Planning for Our Future – Citizen Participation

In November of 2004, the Tunbridge Planning Commission was awarded a Municipal Planning Grant from the Agency of Commerce and Community Development for the purpose of rewriting the Tunbridge Town Plan. The Planning Commission contracted with the Two Rivers-Ottauquechee Regional Commission for technical assistance services and began the process of collecting public input for the new town plan.

The process has been firmly rooted in citizen participation. A series of meetings were held in which citizens were asked what they wanted Tunbridge to be like in the next 5, 15 and 50 years. The response to these meetings and workshops was exceptional. The first of these meetings, a two-day event held in early April of 2005, was attended by over 200 people (15% of Tunbridge's population). As a follow-up to the broader meetings, a series of subject-specific workshops (based on community interests) were held in the fall of 2005. These workshops focused on subjects like education, housing, broadband internet, agriculture, and land use which were determined to be important to the residents of Tunbridge.

The input, comments, and suggestions that the Planning Commission has received from the public have been invaluable in determining what Tunbridge's vision for the future is and what this document says.

B. Why have a Plan?

At first glance, Tunbridge is a small, rural town that has remained relatively untouched by the changes that have occurred in surrounding towns. Tunbridge has not yet suffered from the stresses that a growing population can put on public utilities and services.

Nevertheless, work patterns are changing. It has become far more common for individuals to work outside of Tunbridge, some commuting as much as an hour to their jobs. Tunbridge is close to the Upper Valley, the most rapidly expanding growth center in the State of Vermont. The ease of access, favorable tax rate, and attractive cultural and aesthetic environment makes the Town of Tunbridge a prime candidate for growth. As a result, the population is increasing. In the decades between 1980-1990 and 1990-2000 Tunbridge has experienced a 41% increase in population. Continued population expansion will greatly affect the character of our town. The influx of people will impact schools, require expanded and improved road systems, and most certainly will put a higher burden on our other town services. The face of Vermont is changing, as will the face of Tunbridge.

Change requires our community to examine its current condition and evaluate its prospects for the future. Change can be beneficial, but in order to ensure this, people must understand the problems and opportunities facing the community and identify goals for the future.

Planning is the process of projection. 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 of over-development, high property taxes and increased demands for community services. Tunbridge, like every town, has choices in the way we provide for orderly growth and in the

way we balance our natural and built environments. Planning is done to meet the needs of the people who are here now in the face of change.
Here are some specific reasons to have a Town Plan:

1. A guide for our community – 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.

2. Support for grant applications and planning studies – Many of the state-run grant programs available to Tunbridge look to see if 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.

3. A guide for future development – In towns with no zoning, a Town Plan can be the only tool for local control of development. The District Environmental Commission considers Town Plans during Act 250 hearings, which is why the Plan should clearly explain to developers and others what types of development are preferred in our town and where they should be built.

C. Defining Our Rural Character

Why define it?

Throughout the process of revising this document, it has become clear to the Planning Commission that the "rural character" of Tunbridge is the cornerstone of what makes Tunbridge special to its residents. It is a concept that is very important to our citizens and should be protected; but the protection of "rural character" is difficult in a town with no land use regulation.

In the eyes of the courts, plans are often seen as inspirational, almost idyllic dreams, not grounded in reality. This is, in part, due to a lack of specificity and strict language in typical town plans. Because the Town of Tunbridge does not have the traditional protection that comes from a zoning or development ordinance, and it is unclear whether such regulations would have the support of citizens at this time, it is essential to define "rural character" with specificity for the purposes of review under Act 250.

Tunbridge in the present

The citizens of Tunbridge enjoy the way their town is right now. It is the small, dense villages and the open, working landscapes that define Tunbridge. The continued balance between the dense concentration of development in Tunbridge's villages and hamlets, and the diffuse residential and agricultural development of the areas surrounding the villages is important.

Our villages and hamlets, particularly the Tunbridge and North Tunbridge Villages, are the centers of our active community life.

Tunbridge is a quiet bedroom community. Most residents work out of town and in general, appear comfortable with being such a community, although there is active support for adding more small businesses to the villages and small cottage industries in homes.

Tunbridge residents have a strong "land ethic," a need to protect and work the land. This is embodied in the deep agricultural history, tying rural character to agriculture. Therefore, agriculture, and the flavors, smells and images that go with it, is important to the residents of Tunbridge. Working farms are part of Tunbridge's cultural and physical landscape, and citizens feel that these farms are our future and need to be supported and given opportunities to thrive.

The density of development in Tunbridge is very common in rural Vermont. The Current Land Use Map (Map 2) included with the full version of this document (a large scale-version of this map is on file at the Town Clerk's office) demonstrates that most development exists along Tunbridge's roads. Few structures are located far from these roads, which helps create the open agrarian feel that generates our sense of rural character. Most roads remain unpaved, and are currently meeting local needs.

While development is generally clustered along roads, the Route 110 corridor is not overburdened with an abundance of development. It remains a very scenic valley floor, with the First Branch of the White River and several active farms predominating. Citizens have made it clear that the way this area of town looks right now is important to them. They would like it to remain a relatively undeveloped, scenic agricultural and recreational resource.

Because of the natural resources that exist in Tunbridge, there are abundant formal and informal opportunities for outdoor recreation such as hunting, fishing, hiking, cross-country skiing, snowmobiling, horseback riding, swimming and others. The availability of these opportunities is tied to the rural character of the Town.

Summary of Rural Character

Tunbridge is a quiet Vermont town, surrounded by a mixture of large open fields and tracts of woodlands. Development within Tunbridge Village and North Tunbridge Village is typical of small New England villages. Buildings are built close together, with minimal setbacks from the road. In areas outside Tunbridge's villages, development is much more diffuse, and has taken place along Tunbridge's dirt roads, leaving much of the land open.

Citizens enjoy the opportunities for individual expression and social and community interactions that the Town offers. They believe that people should have the opportunity to utilize their property consistently with uses typical in Tunbridge. These uses may include, but are not limited to,

- Construction
- Farming
- Artisan
- Professional Services
- Public Service
- Small-Businesses

D. General Goals

The following goals are important to our town:

- Remain a rural, agricultural town by supporting and encouraging agricultural activities in Tunbridge – the primary and fundamental intention of Tunbridge.

- Plan for the controlled and orderly growth of the town, utilizing a pattern that maintains Tunbridge's rural character.
- Promote a healthful environment for our citizens, and insure adequate and clean waters and air.
- Encourage the development of small-scale enterprises in the Villages of Tunbridge and North Tunbridge that provide basic skills and services for all of the citizens of Tunbridge, which will enhance and improve the rural way of life that benefits us.
- Ensure necessary public facilities and services within an expressed plan at a reasonable cost through something such as capital budget planning. (See Implementation (D))
- Provide recreational opportunities for townspeople.
- Help provide employment and housing opportunities that allow for affordable living in Tunbridge.

"We do make a difference -- one way or the other.

We are responsible for the impact of our lives. Whatever we do with whatever we have, we leave behind us a legacy for those who follow." ~ Stephen Covey

II. History and Community

A. Tunbridge History

The Town of Tunbridge was chartered under the authority of Governor Benning Wentworth in 1761. Due to the relative remoteness of the township from major New Hampshire towns, the white settlers did not arrive until more than a decade later. Settlement by American colonists came from the east (via Strafford) and from the south (along the First Branch of the White River). The first generally recognized year-round settlement was by the Moses and Susannah Ordway family in about 1775 just across the Strafford border on present-day Gilley Road. The first village at the southern border saw less than a year (in 1780) before it was substantially destroyed by the Raid of 1780, an attack by about 300 Native American fighters organized and led by British officers. It was a handful of years before the claims of new settlers were stable enough to allow the construction of the first frame houses in town for more permanent homesteads.

The land that the settlers encountered must have seemed an unspoiled paradise—as it might to us today. The First Branch flowed wide and steady, varying little through the year. Many varieties of fish, including Atlantic salmon, thrived in the waters in their season. A wide forested floodplain was filled with hemlocks, tamaracks, spruce, and other vegetation that could thrive in the saturated environment. The hills were nearly entirely forested—beech, maple, and chestnut dominating, and the hilltops decorated with deep-rooted red oaks. Some form of this environment had persisted with variation for thousands of years as the Native American populations developed a subtle and attentive stability with the wildlife. The seemingly pristine forest of Tunbridge had therefore been affected by the work of the human cultures, but this environment saw rampant change in the late 1700's as the settlers turned the land to meet their immediate needs.

The land of Tunbridge offered a chance to pitch a claim and make a new start since there were several appealing incentives the environment offered here. The heavily wooded landscape provided a cool, but moderate climate where wildlife flourished, and many provided good food, such as moose, deer, and rabbit. The water table was high, and many dug wells offered homesteads an accessible water supply without digging more than 20 feet, even with sites high on some hills. Virgin hardwood and softwood timber was plentiful to build structures and provide fuel. Best of all, thousands of years of forest had generated topsoil that was relatively deep and very rich. Compared to the worn-out, granitic soils east of the Connecticut, the earth of Vermont offered a haven for struggling farms where they found they could readily grow grain, including wheat, shortly after clearing the land.

To say that the economy rested on an agricultural foundation is certainly an understatement, as most every family would be considered farmers by today's standards, often with specialization or supplementary enterprise to help them trade for what they could not produce themselves. Gardens were commonplace, and many homesteads could grow corn, oats, and barley to feed themselves and their livestock. All would have been used for meat, with poultry contributing eggs and feather, some sheep being sheared for wool, and a few cattle providing dairy, leather, and much needed labor. It would be the hope of every family to have at least one horse for the greatest power in farm work, and for transportation, though human feet certainly were the primary mode of human travel. In the late winter, most households would have taken advantage of the good sugaring climate to put away maple sugar—the only affordable sweetener for most residents. Lumber would have been so plentiful and cheap that deforestation was the norm to "improve" the land according to the short-term agricultural values of the homesteaders.

The natural environment not only supplied the settlers with raw materials to survive, but it also gave them some compact exports that could be used to purchase goods from elsewhere. Wood that was not used for building materials or firewood was often burned outright for the production of potash for export—one of the few resources compact and valuable enough to be exported in this era, supplying the settlers with some of the only cash they handled. Animal furs and skins were another durable commodity which was at first easy to come by, but was soon harder to accumulate in great numbers. These were used to bring back purchased goods like salt, spices, and some manufactured goods such as fine tools and delicate textiles.

The story of the European settlement of this frontier in Tunbridge had some common themes and trends. While some new Tunbridge residents came from immediately adjacent areas to the south and west, larger waves of new settlers came from communities in Massachusetts and Connecticut, downstream in the Connecticut River valley. These areas were seeing rising property values, and immigrants saw the lands of the "New Hampshire Grants" as promising new land for agriculture. On top of this attraction, many of this time period, and eras since, have seen this area as a place to make a new start in life. Many, like the family of Joseph Smith, the future founder of the Mormon Church, came to Tunbridge to live life freely according to their own unconventional religious and social beliefs. In many ways, Vermont overall served as the "Wild West" of New England at this time.

This is not to say there was not considerable unity and common ground through much of the town. Town meetings began as early as 1785, including only male adults who owned property in town. Early town planning recognized the common need throughout the new town for bridges, major mills, cemeteries, schools, and a meetinghouse. The meetinghouse was probably the first major project initiated, for the building was sited in the exact geographic center of town, on the west side of the river across from the present town garage. The town fathers made the reasonable assumption that this would be the middle of town settlement, but this outcome was undermined by two major shortcomings: it was one of the only structures sited on the west side of the First Branch, with no reliable way to cross to it, and there was no easy way to dam up the river for a mill, thus offering no foundation for a village and marketplace. Schools were also an early priority in Tunbridge, and by 1791 the town was divided into eleven school districts.

Early homesteads relied on transportation only occasionally by modern standards, as the settlements were largely self-sufficient in the early Tunbridge economy. Nonetheless, connecting the residents of Tunbridge with each other and the outside world was an essential need that the town recognized. By the law upon which the charter of Tunbridge rests, the town had the right to lay aside land for public roads, when and where town officials found it necessary. Main roads were planned in the 1780's, branching off of the central valley's highway, with ten major bridges planned to span the First Branch. The best laid plans, however, often are humbled by the shortage of money, resources, and labor, so roads were rough and the first permanent bridge was built at the town's geographic center only in 1793. This occurred so that most residents who lived in the east could get to the new meetinghouse, but it also allowed for the more aggressive settlement of the western side of town. With roads unmaintained and traveling vehicles being something of a luxury, residents found it advantageous to develop dwellings in clusters, as residents have through the vast majority of Tunbridge history. Dwellings congregated in South Tunbridge, Clarksville, the upper Strafford Road, and even Brocklebank, as well as the dominant villages in central Tunbridge and in North Tunbridge. Far from seeking privacy, residents found seclusion largely a necessary evil of any homesteads which ended up inaccessible or far flung from the areas that became favored for larger settlements. Most every house built over the first century in Tunbridge was close to a town "highway"—the closer the better. The

postal service was an invaluable link to Tunbridge residents, but those outside of the villages had to wait until they made trips into town to see if they had mail.

This population boom ended with the numerous homesteads finding their land and its resources exhausted, and word of flatter and richer land across the Appalachian Mountains (in the Midwest) pulled many residents of Tunbridge away. Remarkably the following decades saw a tremendous building boom of sound permanent residences, many of which survive to the present day.

The 1850's saw the coming of the railroad (via South Royalton), and with the railroad came the rise of the export economy and a swell of industry in Tunbridge. Sheep were still abundant, and two entrepreneurial brothers by the name of Gay set up a sizeable woolen mill just north of Tunbridge Village. In North Tunbridge such enterprises as the Smith Foundry created numerous cast iron implements, including plows and two modest sizes of wood stoves. Other enterprises used the turning power of the river to drive a large cider mill and another mill that crafted wooden implements such as rakes and tool handles. Lumber and grist continued to be processed at the many dams up the First Branch, and small mills along the brooks helped provide for the milling needs of families. Stores, politics and A. N. King—the Gilded Age comes to Tunbridge

When the Civil War erupted in 1861, Vermont answered the call with more volunteers for its population than any other Union state. Tunbridge was no exception, and fervor to preserve the Union was so strong that no draft was ever forced upon the residents of the town. Many boys from Tunbridge were killed or died of disease in the conflict—far more than in any other war in the history of the Republic. The end of the war also brought many other Tunbridge men to the faraway world they witnessed in the service, and opportunities by the expanding settlement in the West all contributed the continuing decline of the population. Veterans that returned were by some estimates the "greatest generation," volunteering in civic office, bringing leadership to the town, and investing in the town in other diverse ways.

The ensuing years saw the ingenuity of the remaining people of Tunbridge put to surprising good use. Tunbridge still relied heavily on its agricultural foundations, and the residents of the valley rallied to form the Union Agricultural Society, holding its first exposition in 1867. The harvest festival soon grew in magnitude to become what one lieutenant governor referred to as the "little World's Fair" which has endured ever since. The Grange was also formed as a supportive co-operative society where farmers could buy in bulk, as well as find fellowship with their neighbors.

As industries came and went in Tunbridge, the turn to the 20th century saw the residents relying more heavily on the agricultural base of their predecessors. A key difference was that large farms elsewhere, particularly in the Midwest and West, now competed directly and indirectly in the price of some general agricultural commodities, such as grain and wool. While self-sufficiency and bartering still figured in the Tunbridge economy, modernization also brought the expectation as well as the need for new goods that could not be produced locally. One way farmers responded to this strain was in the harvest and use of ice, which made it possible to export some perishable food farther away. Some farmers found work in other ways; some farmers immigrated to take their place, but the trend was a steady erosion of the agricultural working population in Tunbridge.

The turn to the 20th century saw the population continue to slowly decline, but life was accelerating. Electricity finds its way to town over the first four decades. This new power had been relied upon in the form of heavy batteries, but these new lines carrying current to Tunbridge opened up new possibilities to residents, and the appetite for this new power grew.

In the 1930 pavement comes and covered bridges start to be dismantled. The self-sufficiency of Vermonters has led some to observe "the Depression may have come, but no on could be sure" -- the shortage of cash did indeed find many farming families borrowing from those with money, and – finding themselves unable to pay it back in a timely manner—lost their properties.

Even as modernization and its effects were arriving in Tunbridge, the population declined into the mid-1960's. In 1954 one result represented how modern technology and the greater affordability of construction was changing the operating principles of the town, as the decline in populations convinced the town to make the final consolidation of school districts into one Tunbridge Central School. The siting of the school showed that central location and structural conservation was no longer required; an opportunity to buy a vacant farm site was sufficient to convince the town to site the school considerably north of the northernmost village and build an entirely new structure. While the School was now adjacent to Route110, the choice clearly assumed that automobiles rather than walking would be the major means of transportation.

The cheap nature of transportation in the 1960's brought some unwelcome changes in the agricultural nature of Tunbridge, and many farmers found themselves unable to sustain their livelihoods in this changing world. The influence of the railroad had become less significant, and large trucks replaced them as the primary vehicles for moving food. Consequently, some enterprises like the Tunbridge Cooperative Creamery and the canning operations in locales such as Randolph closed down in the shadow of larger processors. Farmers were told by agricultural analysts that they needed to adopt new technology and grow bigger, focusing on a single commodity—quite the contrary of what Tunbridge farmers had traditionally done over the past two centuries. Aside from growing their own gardens and having a few animals on the side, raw dairy milk became that single commodity that farmers worked to produce. Besides this limited market, and larger farms in the Midwest, the farmers who were struggling to make it in the dairy business found they were required to buy a bulk tank in order to sell to the bigger dairy processors, and many found themselves unable or unwilling to make this expensive and risky investment. A final factor that was affecting every part of the community was also the result of cheap transportation: the steady increase of the value of property here.

The boom that the nation felt after World War II found Americans with an increasing desire for homes away from urban areas, and the increase of prices for land in rural areas was the inevitable result. Tunbridge land and homesteads were affordable and appealing to many who sought vacation homes, which could be reached now in a day's drive from many cities and large towns throughout the Northeast. Property here was desirable for many new residents such as writers, artists and others with occupations that did not require daily time in a central office.

1960's- bring the Bulk tank, Hippies, and concerns about planning
- First zoning plan ends in failure
- Agricultural economy becomes unstable with rising land prices
- Processing plants close down, farms are sold
- Population starts to increase from its low in 1965

The era of large industry got under way in earnest after the Civil War, largely supported by the new proximity of the railroad in South Royalton. A main focus of this industry was connected with the mills Many of these mills each produced hundreds of thousands of board feet each year. The twist with big industry then as now was that the life blood of the local endeavor was kept alive only by the circulation of the transportation system. Many of the materials – wood and wool, for instance – came from local sources, but the consumption was more distant. Eventually, the forest and soils supporting

the wool industry had declined, and the cheap sources were farther west. The nature of these new endeavors forced businesses to move into greater proximity to the railways or lose the ability to compete. Some industries moved, and others closed down--- some lasting only to the turn of the century, while others (such as a few lumber mills) living in the memory of many current residents.

The 20th century saw a dramatic revolution in commerce at the local level. While the number of roads in town has diminished, the roads still in use have become far more heavily used in the last 50 years. As homesteads were largely self-sufficient units at the beginning of the 1900's, going out on a trip of any length was an occasion. With the current economic climate, it is now the exception rather than the rule that a resident with a car remains at home. And the length of the trips have changed enormously: a business trip to South Royalton in a horse and wagon took up a full day of work, while the driver of an automobile may complete the entire trip (with transactions) within an hour and consider themselves not really to have "gone anywhere" of note. Villages have gone from destination to a place to visit. Roads have required greater maintenance, accounting for what is now proportionally the fastest growing part of the town's expenditures. The upgrading and widening of the roads creates a more friendly climate to those seeking to develop land on the back roads, as well as making travel at higher speed at least appear more feasible.

B. The Tunbridge Community

Community is one of Tunbridge's strongest assets. In many of the public meetings held while writing this document, residents commented about the sense of community that thrives in the Town and how important it is to them. Citizens enjoy the programs offered in Tunbridge such as the recreational programs, and school-based, school club and library activities, as well as the cherished traditions of the months surrounding the Tunbridge World's Fair, ice cream and sugar-on-snow socials, pot lucks and Memorial Day events.

Tunbridge citizens seem to come together for business and pleasure with a regularity that is unique in this day and age. Community dinners, the Tunbridge World's Fair, school functions and town functions are well attended by today's standards.

In part, the topography of Tunbridge has helped shape the community. Tunbridge is bisected by Route 110. Unlike neighboring towns, Tunbridge has no villages that are separated by the topography. The very "central" nature of the Route 110 valley and the villages located in it draw the community to the heart of the town.

The rural, agricultural heritage coupled with Tunbridge's emerging status as a bedroom community creates a unique mix of individuals from all walks of life. Comments during the two-day visioning workshop in April of 2004 reflect this:

"People respect each other as human beings."

"Rich people live beside poor people very well."

"We're willing to help one another when help is needed."

"People are able to lead private lives as they see fit."

Of course, Tunbridge must always be aware that it takes *community effort* to maintain the feeling of community that is so cherished by its residents. Attendees of the Planning Commission's workshops noted a decline in volunteerism. This is, in part, a result of cultural changes. Most families must work full time, often with both parents working outside of Tunbridge. Tight schedules and work commitments can make it difficult to give time to the community.

C. Goals, Policies and Recommendations

Goals

1. Increase volunteerism for public programs and services.

Policies

1. The Town will continue to use public facilities for public community events.
2. The Town will support efforts to encourage volunteerism.
3. The Town will continue to support community programs.

Recommendations

1. Install welcome signs in the villages.
2. Create a public bulletin board and/or web site.

"A viable neighborhood is a community: and a viable community is made up of neighbors who cherish and protect what they have in common." ~ Wendell Berry

III. Population

A. Population Patterns

Population, when considered in terms of past, present and future statistics, represents an important factor in the overall development patterns of our town. Rapid population increases can create a demand for new and expanded municipal services, and can strain the financial ability of a town to provide public services economically, which is important to our Citizens and taxpayers.

Shown below are population statistics for the Town of Tunbridge taken from the U.S. Census Bureau. According to the U.S. Census, Tunbridge's year 2000 population numbered 1,309, compared to a population of 1,154 in 1990, resulting in a 1990s growth rate of 13.2%. Tunbridge's growth rate of 13.2% was higher than the 8% rate of growth achieved by the State of Vermont and the Two Rivers–Ottauquechee Region, a pattern which we expect to continue.

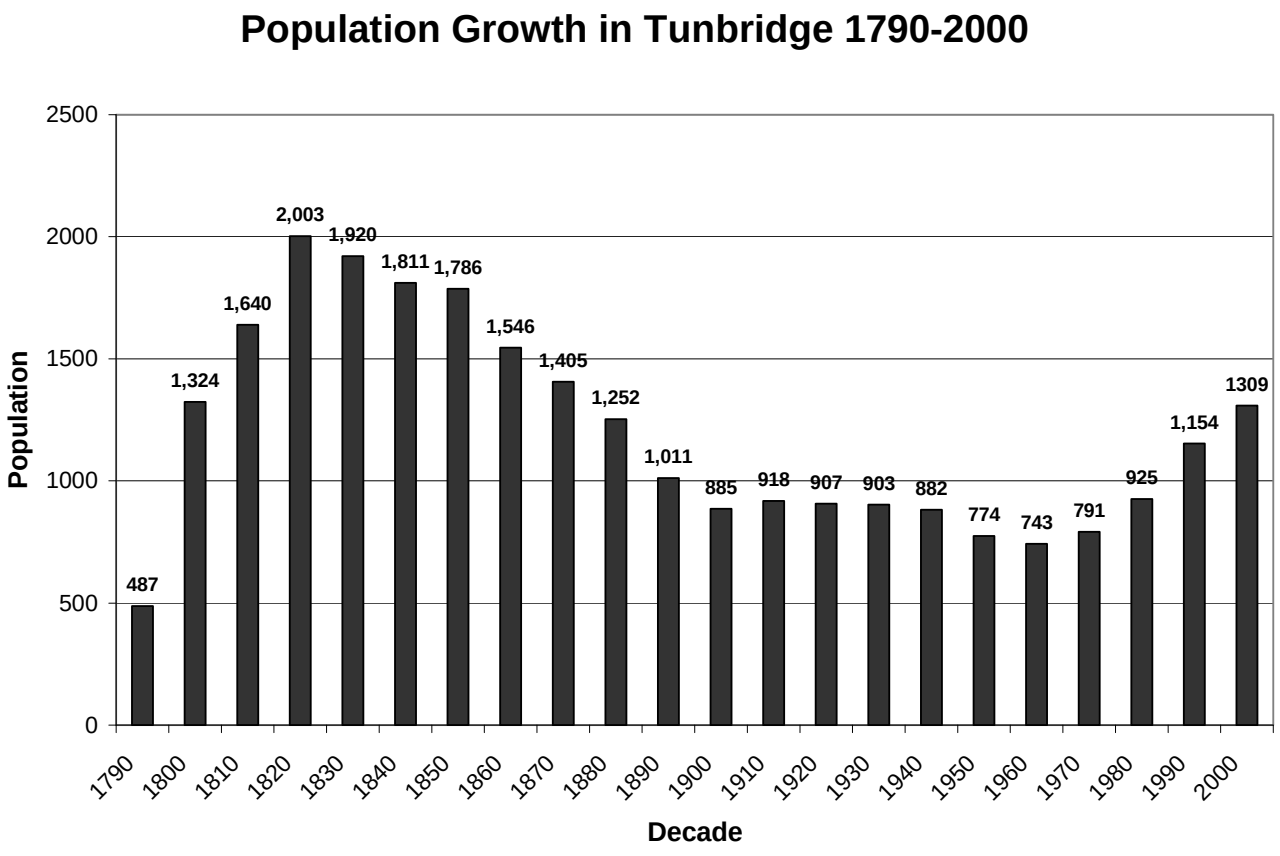


Figure 1- Source: Center for Rural Studies, 2000 U.S. Census

When Tunbridge's population growth over the past 30 years is compared to neighboring communities, it is clear that Tunbridge has become a preferred location among the five towns to purchase property. Since 1980 Tunbridge has seen a 41% increase in population. This is 7% greater than Strafford, which has had the second largest population increase since 1980. The primary factor influencing population growth is new residents moving into Tunbridge, rather than unusual rates of birth or death.

Population Growth, Tunbridge and Surrounding Area					
	1970	1980	1990	2000	2015
Tunbridge	**791**	**925**	**1154**	**1309**	**1388**
% Change	**+2.2%**	**+16.9%**	**+24.7%**	**+13.42%**	**+6.0%**
Chelsea	983	1091	1166	1250	1248
% Change	-4.1%	+10.9%	+6.8%	+7.2%	-.02%
Randolph	3882	4689	4764	4853	4855
% Change	+10.9%	+20.7%	+1.5%	+1.9%	+0%
Royalton	1399	2100	2389	2603	2897
% Change	+5.1%	+50%	+13.7%	+8.9%	+11.3%
Strafford	536	781	902	1045	1125
% Change	-21.2%	+45.7%	+15.4%	+15.8%	+7.7%

Figure 2 - Source: Center for Rural Studies, 2000 U.S. Census

Notably, since the 9/11 attack on the World Trade Center in NYC, Tunbridge, as well as other towns in Vermont, has experienced an increase in people from out of state buying residences in town. Much of this incoming population has a higher personal income that those who currently reside in Tunbridge. This pattern will likely continue, and it will impact the Town on many levels including taxes, the availability of affordable housing, education and even the sense of community.

B. Age of Population

As indicated in figure 3, between 1990 and 2000 population increases have occurred primarily in the 35-54-year-old range, which reflects the ongoing effect of the baby boomer generation. Overall for Vermont, the number of residents 25-44 years of age dropped 5% as baby boomers continued to move into their late 40s to 50s.

Losses in the 25-34 age group indicate that Tunbridge is losing much of its younger workforce. Young adults are both not able and not choosing to return to Tunbridge to work after they attend college. Lack of work opportunities, and high land and housing costs often prevent young people from returning.

The comparison between the 1990 and 2000 census information also indicates that many of Tunbridge's new residents are between the ages of 35-54. The increase of population at this age group may in part explain declining enrollment in the Tunbridge school system as families in their late 40s to mid 50s often have children who are in high school or college.

Tunbridge also has an aging population. In 2000, 13.2% of residents were over 65 years of age, which was higher than both Orange County and Vermont data at 12.4%. An aging population will need services that are not readily available in a town like Tunbridge. The need for elderly housing will increase. Additionally, Tunbridge may see an increase in home sales as elderly residents become uncomfortable with maintaining larger houses on their own.

One program that will benefit the elderly in Tunbridge is the "Neighbors Helping Neighbors" program. This program was started by local residents in order to improve the lives of all residents – young, old, rich or poor. Neighbors Helping Neighbors relies on the strong community to supply labor for volunteer activities at no charge to the beneficiary. To date, the program has a list of nearly 40 individuals willing to volunteer.

Neighbors Helping Neighbors offers a broad range of services including transporting people to and from medical appointments, picking up prescriptions, loaning medical equipment on a short-term basis, cooking meals for people who are ill, making minor home improvements and assisting with automobile repairs.

The program also sponsors or assists in events or programs such as community pot-luck suppers, speakers or musical programs of interest to the community, and healthy cooking workshops.

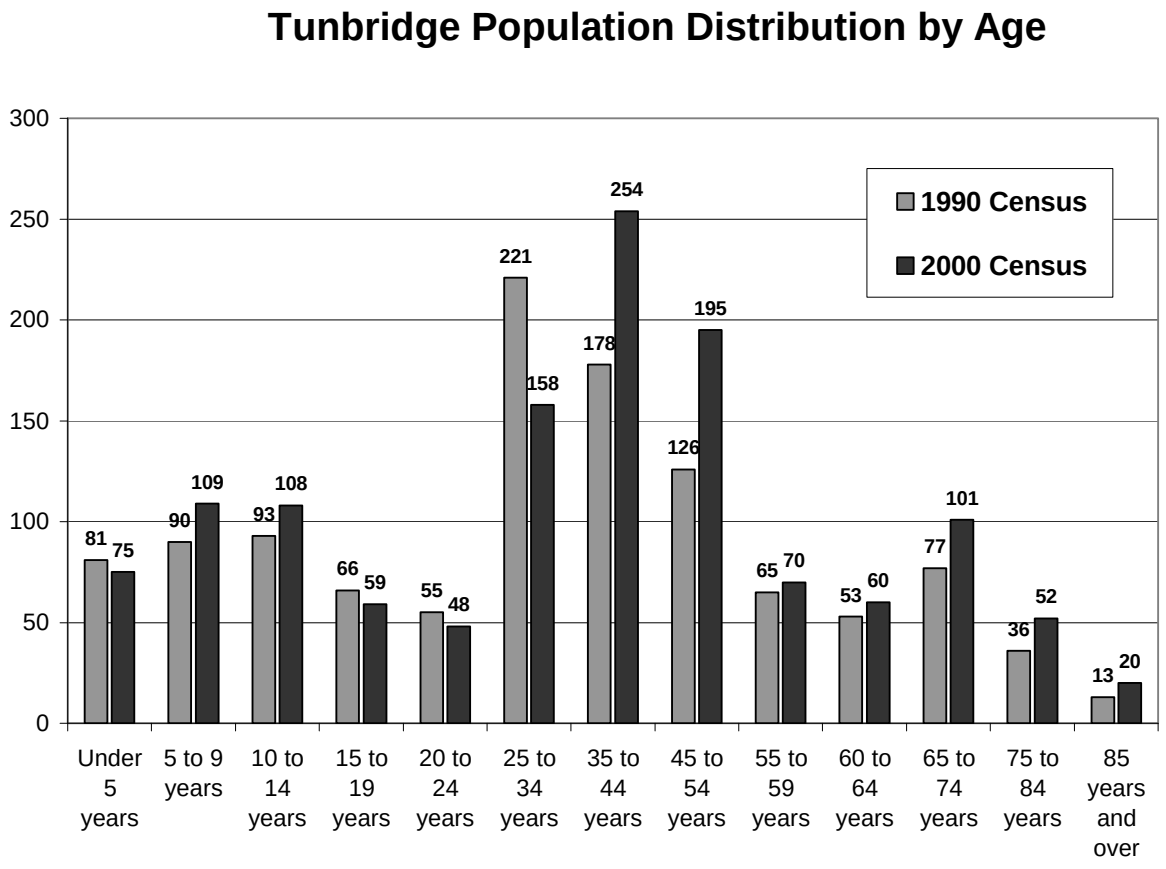


Figure 3 - Source: 1990 & 2000 U.S. Census

C. Relative Income of Population

The Vermont Department of Taxes annually publishes *Vermont Tax Statistics*, which includes a summary of personal income tax returns filed with the State. In 2005, 637 personal income tax returns were filed from residents in Tunbridge. Eleven hundred and fifty-two (1,152) exemptions were claimed. Total adjusted gross personal income reported for Tunbridge residents was $25,553,422. Based on the information below, Tunbridge's average income is slightly greater than neighbors Chelsea and Royalton. However, the area as a whole appears to be generally below the State average of $48,562.

Town	Returns Filed	Adjusted Gross Income	Average Income
Tunbridge	**621**	**$25,553,411**	**$41,149**
Chelsea	602	$22,334,309	$37,100
Royalton	1253	$46,232,911	$36,898
Vershire	345	$13,885,724	$40,248
Strafford	554	$31,890,775	$57,565
Vermont	301,188	$14,626,285,918	$48,562

Figure 4 - Source: Vermont Department of Taxes, 2004

For 2005, 52.8% of the total personal income generated in Tunbridge was by filers earning $30,000 or more and 47% were earning less than $30,000.

"Never doubt that a small group of thoughtful committed citizens can change the world; indeed, it is the only thing that ever has". ~ Margaret Mead

IV. Economic Base

A. Employment and Jobs

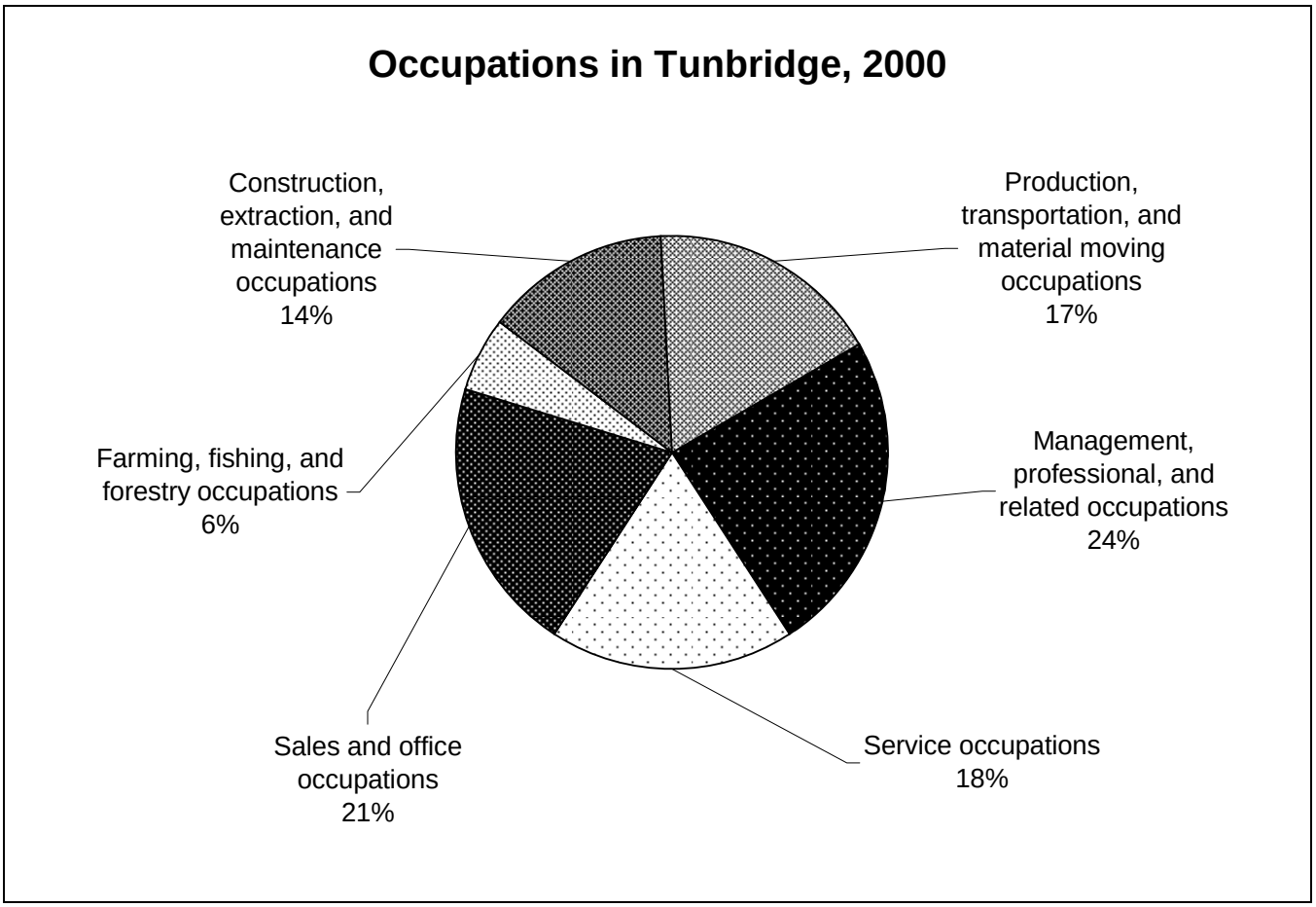


Figure 5 - Source: 2000 U.S. Census

Tunbridge does not serve as an economic hub for commercial and industrial activity. Residents go to the Towns of Chelsea, South Royalton, Montpelier, Barre, Randolph, Hanover and West Lebanon, NH, for banking, professional and related services. Ninety-six percent (561) of Tunbridge's resident work force 16 years and older reported their occupations as part of the 2000 Census.

The pie chart above indicates that almost half the population of Tunbridge is employed in some form of management, professional, or sales and officer profession. As there are few opportunities of this sort in Tunbridge itself, this further supports the notion that Tunbridge is a bedroom community. Agriculture, construction, logging, and public occupations (teacher, road crew, etc.) have been the traditional occupations carried on in the Town. However, many small businesses have been established in Tunbridge in recent years, including the following types:

- Artisan
- Farming
- Forestry
- Laborer

- Light Industry
- Professional
- Retail

Most of these businesses are viable and aggregate a small number of jobs. Many are operated out of homes. Where non-family members are employed, these seem to be a mix of newcomers and long-time residents.

Interestingly, the physical impact of this job creation seems to be almost undetectable; most new businesses are carried out in existing buildings or modestly scaled new buildings or additions. Several old buildings have been renovated and improved by these activities. Most businesses would not be considered "industrial." The apparent lack of discernable impact of these types of businesses makes them favorable to the citizens of Tunbridge. Small, home-based businesses tend to fit well within Tunbridge's idea of rural character.

One surprising piece of the U.S. Census employment information is that as much as agriculture is a part of Tunbridge's rural character and history, only 6% of the population is involved with farming, fishing or forestry. The primary farming occupation seems to be in dairy, but there are a number of small diversified farming occupations developing in Tunbridge. For more detailed information on agriculture, see chapter XI.

As always, there are challenges to be met when one is starting a business. Health insurance costs in Vermont are high, as are income taxes. Some things, however, such as the expense of workers' compensation, are actually less expensive than surrounding states. In general, if an individual chooses to start a business in a rural town like Tunbridge, they choose to do so because of the people and environment that are unique to Vermont.

"More than any other time in history, mankind faces a crossroads.

One path leads to despair and utter hopelessness. The other, to total extinction.

Let us pray we have the wisdom to choose correctly." ~ Woody Allen

B. Historic Wages of Population

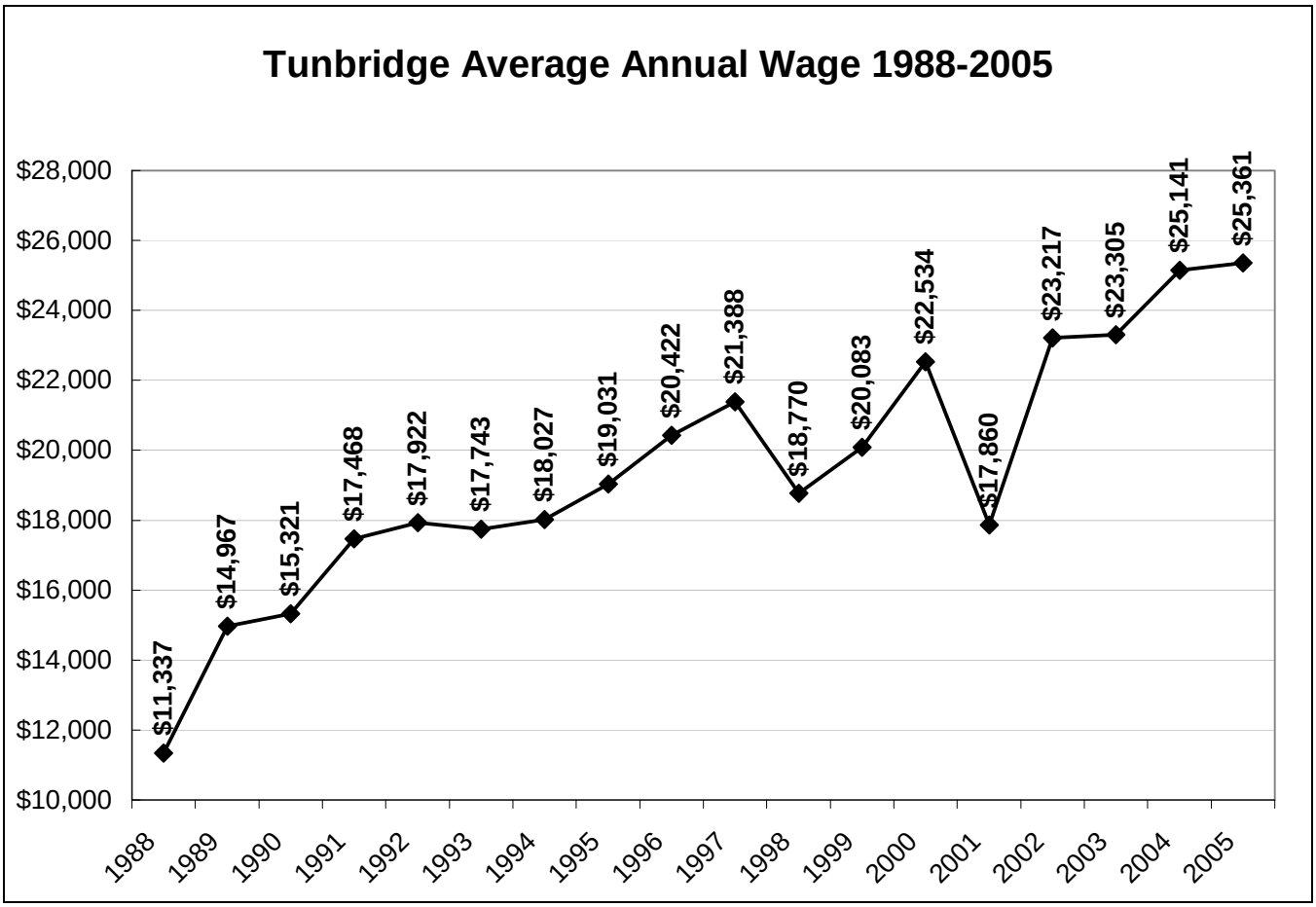


Figure 6 - Source: 2000 U.S. Census

The average yearly wage of an individual in Tunbridge is $25,361 as compared to $34,199 for the State of Vermont on the whole. Of 2005 income tax filers in Tunbridge, nearly 40% made less than the state average yearly wage. In Orange County, 47% of filers reported making less than $20,000, while in Tunbridge that number was 38%. On the opposite side of the income spectrum, 2% of the Tunbridge population are millionaires, as compared to 5% in Orange County.

One of the primary concerns voiced by Tunbridge residents is that younger people are attracted to better paying jobs than are generally available in or near Tunbridge. Land and housing costs also contribute to this trend. As a result, Tunbridge is seeing many young people move out of town. Land and housing costs also contribute to this trend.

"A good plan today is better than a perfect plan tomorrow."

~ George S. Patton

C. Taxes

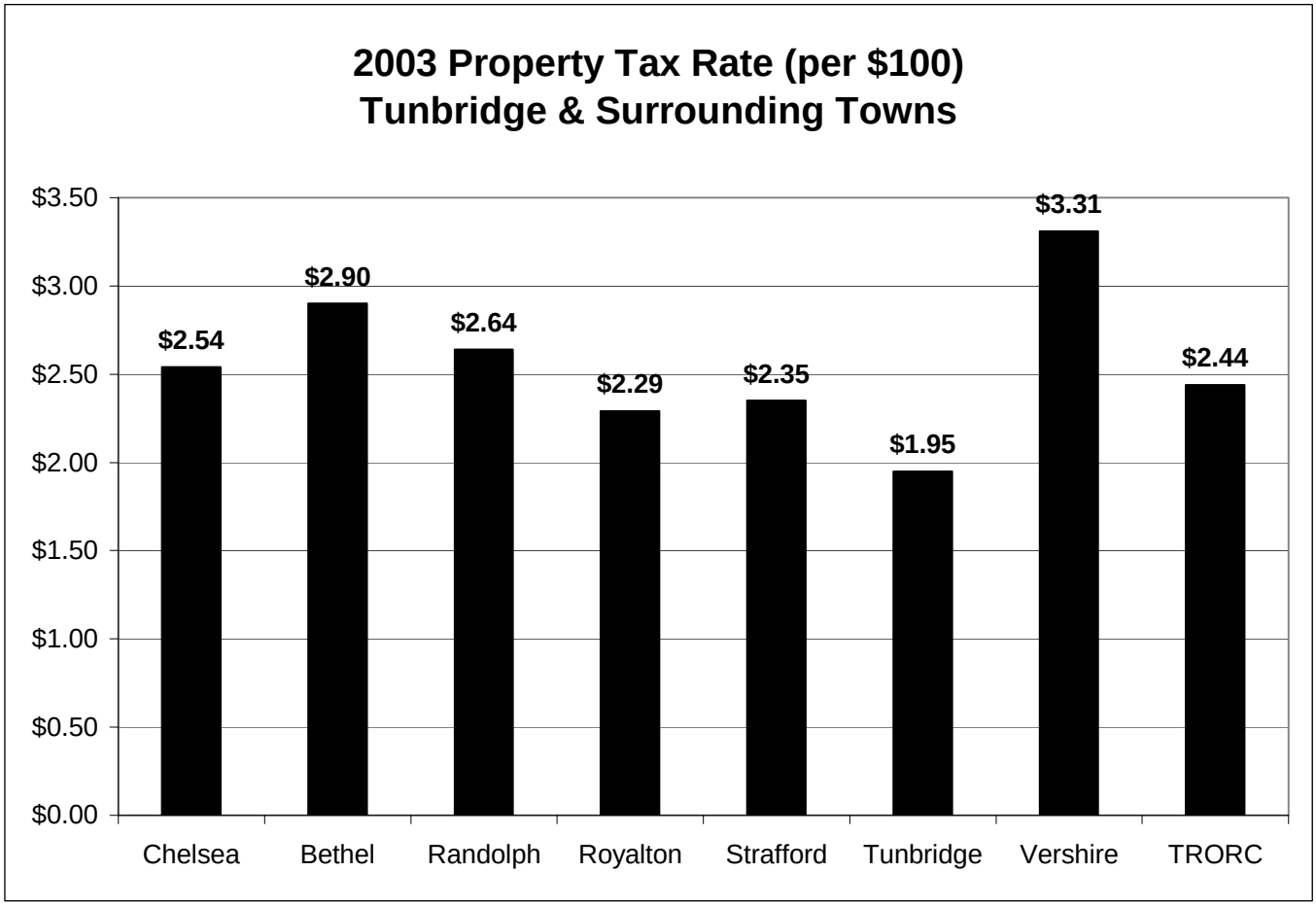


Figure 7 - Source: Vermont Department of Taxes

Citizens in Tunbridge are concerned about the continued rise of property taxes and the burden they continue to put on individuals who make only the average wage. Yet as information from the Vermont Department of Taxes taken in 2003 indicates, Tunbridge has the lowest tax rate in its surrounding area. It is hard to deny, however, that rising property values are making it harder for middle-class citizens to buy homes in Tunbridge. These costs, coupled with increases in the overall cost of living, are making it more difficult for Tunbridge to attract young families.

Vermont's Agricultural and Managed Forest Land Use Value Program – better known as the Current Use Program – offers landowners use value property taxation based on the productive value of land rather than based on the traditional "highest and best" use of the land. According to the Vermont Department of Taxes, in 2000 the current use value of the land in the program averaged about 20 percent of the full fair market value. In 2003, Tunbridge had the third highest number of parcels in Current Use statewide. In 2005, there were 152 properties in Current Use. In general, the current use program has a limited impact on taxes, as the program reimburses towns on what they lose in municipal taxes.

"You must be the change you wish to see in the world." ~ Mahatma Gandhi

D. Economic Development

The villages of Tunbridge, although acting as the center for community activities, are not the center of economic activities in Tunbridge. There is no economic center, which implies that citizens go elsewhere to do business. The Tunbridge Fairgrounds is clearly an asset to the community, bringing people from near and far for such occasions as the Tunbridge World's Fair and the Vermont History Expo. However, these have a limited effect on the community's economic base.

The most important consideration for continuing economic development and related growth in Tunbridge is that such development be consistent with the rural character of the Town. The types of small businesses and home occupations that are listed in "A" of this section of the Plan are appropriate for Tunbridge specifically because of the limited impact on or enhancement of the Town's rural character.

Because small businesses seem to be most appropriate for Tunbridge, a committee has been organized to investigate high speed internet options throughout the town. Committee members are working hard to make broadband a likelihood in the near future. The availability of broadband and improved cell phone coverage would probably encourage the continued development of small, low-impact businesses in Tunbridge.

Residents have indicated that they would like to see such things as a coffee house, restaurant, or general store in the villages – particularly in Tunbridge Village as there is already a popular store in North Tunbridge. Such businesses should be encouraged to utilize existing historic buildings rather than build new ones. Fortunately for commercial developers, the villages of both Tunbridge and North Tunbridge have been designated "Village Centers" as part of the Vermont Downtown Program. This program offers income tax credit rebates for things like rehabilitation of historic structures and code improvements. For more information on this program, contact the Tunbridge Planning Commission, the Two Rivers-Ottauquechee Regional Commission, or the Vermont Downtown Board.

The working landscape that makes up such an important part of Tunbridge's rural character could be an important part of future economic development in Town. Promoting the creation of small, diversified farms and a year-round farmers' market might help add local jobs and increase the number of working farms in Tunbridge.

More information on Agriculture in Tunbridge can be found in the Agriculture section of this plan, on page 52.

E. Goals, Policies and Recommendations for Action

Policies

1. Support community efforts to bring broadband internet access to the entire Town
2. Encourage home businesses and cottage industries.
3. Encourage the revitalization of historic buildings in the Villages.
4. Encourage low impact businesses to locate in the Villages.
5. Encourage businesses that use existing buildings in an appropriate manner.
6. Support economic projects that trigger Act 250 provided they are in accordance with the provisions of this Town Plan.
7. Encourage agriculture-related small businesses.
8. Keep the Tunbridge and North Tunbridge village designations up-to-date.

Goals

1. Bring broadband to as much of Tunbridge as is possible.
2. Support the creation of a community gathering place in Town.
3. Create a Tunbridge farmers' market.

Recommendations for action

1. Continue to investigate the benefits of bringing broadband to Tunbridge.
2. Create a public bulletin board and/or web site.
3. Further investigate policies which could assist the viability of family farms within Town.
4. Form a committee to investigate the creation of a farmers' market in Tunbridge.
5. Conduct a study that determines the types of businesses most compatible with the rural character of Tunbridge.

"I get up every morning determined to both change the world and to have one hell of a good time. Sometimes, this makes planning the day difficult." ~ E. B. White

V. Housing

A. Introduction

A major function of local housing planning is to meet two community objectives – first, safe and affordable housing for its present and future population, and second, suitable density and distribution of housing throughout the community. Growth in housing affects the Town's capacity to provide facilities and services to our townspeople and the character of the area. Housing built without adequate planning for schools, roads, and other public services can overburden the ability of the taxpayers to pay for these services, and also can lower adjacent property values and negatively affect the rural character of the Town.

This section discusses the amount, type, location, and affordability of existing housing and the needs for future housing. Other sections of this Plan also include information on housing. See also Appendix B for a list of housing resources.

B. Number of Housing Units

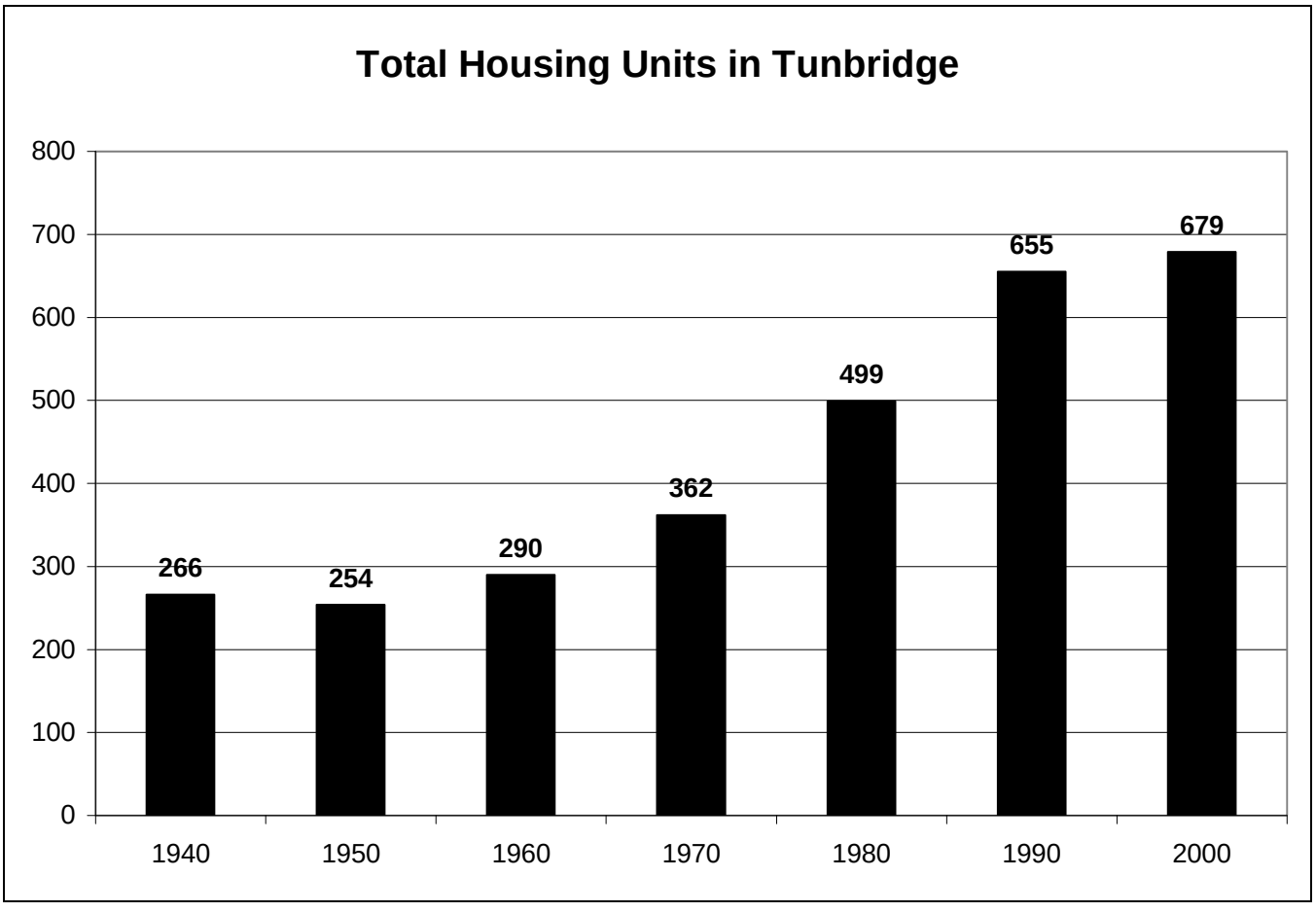


Figure 8 - Source: Vermont Housing Data

Tunbridge's total number of housing units has been increasing since the 1960s. The 1970s and 1980s saw a large increase in the number of homes being built throughout Vermont, and Tunbridge was no exception. Tunbridge experienced a 31% increase in new homes between 1980 and 1990, which kept pace with the 30% increase reflected in Orange County Data. This was due in large part to an increase in the purchase of second homes, and to individuals from out of state moving from the city to the country. During the last decade, however, the pace of new home development in Tunbridge has decreased dramatically. Between 1990 and 2000, the percentage of new home growth in Orange County was greater than 8%, whereas Tunbridge's new home growth was less than 4%.

C. Types of Housing

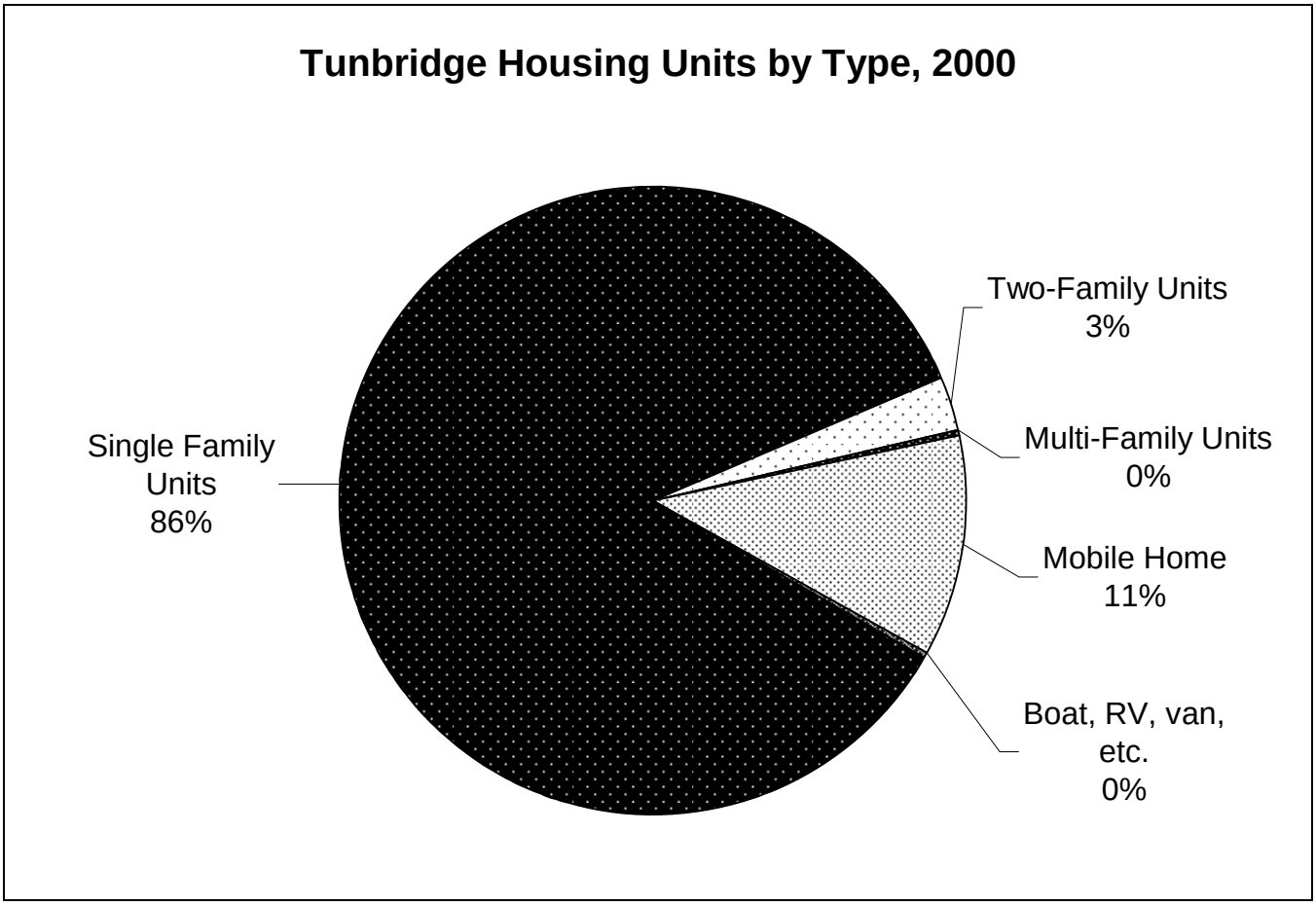


Figure 9 - Source: 2000 U.S. Census

The U.S. Census defines a "housing unit" to include conventional houses, apartments, mobile homes, and rooms for occupancy. According to the 2000 Census, Tunbridge has a total of 679 housing units. Like most of the units in towns throughout Vermont, they are predominantly single-family homes, with mobile homes being a distant second.

As indicated by Figure 10, 63% of the housing stock in Tunbridge is owner occupied. An additional 20% of the housing is dedicated to seasonal, recreational or occasional use, making Tunbridge unique when compared to 13.8% in Orange County and 14.6% in Vermont as a whole. 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 Tunbridge, like many other Vermont towns, has a volunteer fire department. This department depends 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. Although Tunbridge's percentage of seasonal housing stock is higher than much of the surrounding area, in the past decade the number has actually decreased by 28%, indicating that homes are being sold to individuals who wish to make Tunbridge their permanent home.

Vacation homes notwithstanding, Tunbridge had only 2% of its total housing stock vacant in 2000. Anything below 5% is functionally considered a zero, so in general, Tunbridge does not have much available housing stock to offer, which can have a direct impact on the affordability of housing.

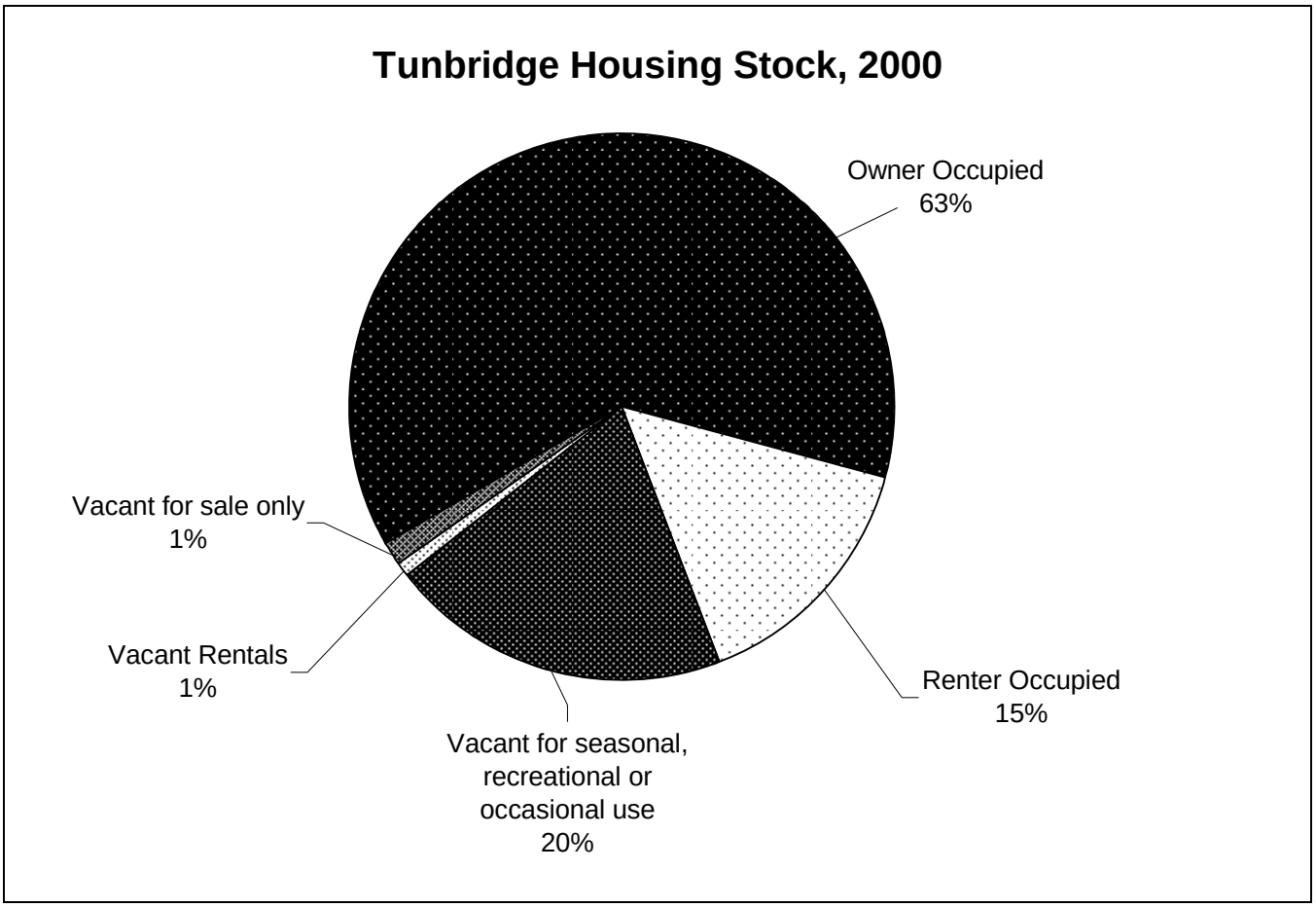


Figure 10 - Source: Vermont Housing Data, 2000

D. Affordable Housing

Important Points

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

Residents in Tunbridge making the average income of $25,361 are paying 24% of their income for the average gross rental rate, which means the rental properties in Tunbridge are, on the average, affordable. However, the number of rental units in Tunbridge is 16% of the total housing stock, and only 5 units were vacant in 2000, indicating that there is a need for additional rental housing. The

Tunbridge community is aware of this need and is concerned about it. In particular, they have acknowledged the impacts that a lack of affordable housing has on attracting young families to their town.

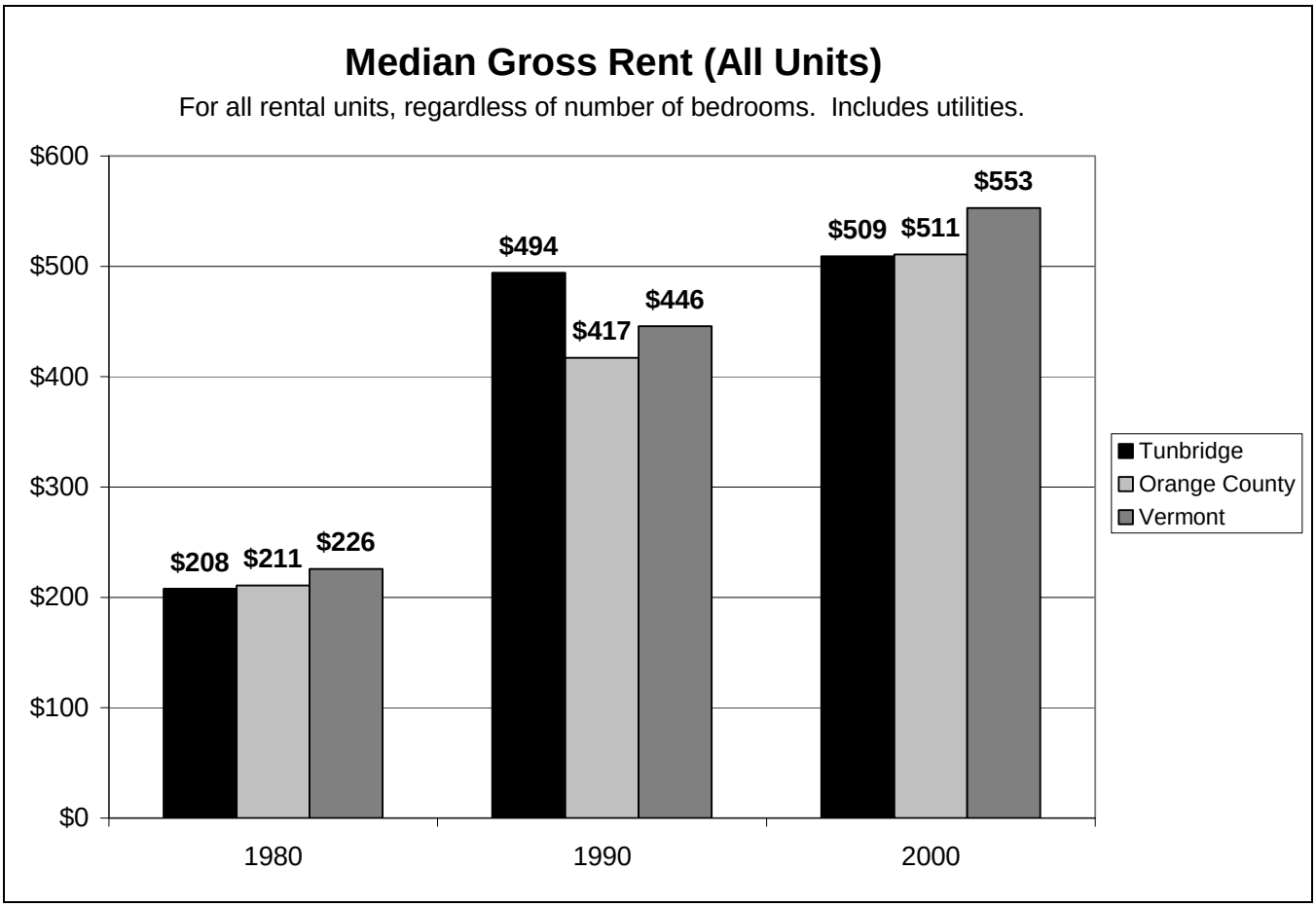


Figure 11 - Source: Vermont Housing Data

Growth is inevitable and desirable, but destruction of community character is not. The question is not whether your part of the world is going to change. The question is how.

-Edward T. McMahon

E. Elderly Housing

Nursing and Residential Care Facilities Total beds by provider type, by town.			
	Nursing Care Level II	Residential Care Level III	Residential Care Level IV
Chelsea	0	21	0
Bethel	0	0	0
Randolph	20	18	0
Royalton	0	0	0
Strafford	0	0	0
Tunbridge	**0**	**0**	**0**
Vershire	0	7	0

Figure 12 - Source: TRORC Inventory of Nursing and Residential Care Facilities, 2003

According to the 2000 U.S. Census, there are 173 individuals in Tunbridge who are 65 or older. Of homeowners in Tunbridge, 25% are 65 or older. Sixteen percent of renters in Tunbridge are 65 or older. Residents believe that rising taxes are making it harder for the elderly to afford to own a home in Tunbridge.

As the elderly 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 12, there are very few options in Tunbridge or the surrounding area for this type of care. Elderly Tunbridge 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.

In an effort to help seniors remain in their homes and their community, a group of Tunbridge citizens created the Tunbridge Neighbors Helping Neighbors program. This program offers a wide range of assistance to all residents of Tunbridge, not just the elderly. With a list of nearly forty volunteers, Neighbors Helping Neighbors offers services such as transportation to and from medical appointments, picking up prescriptions, short term loans of medical equipment, cooking meals for people who are ill, simple appliance repair, and minor car repair, all at no charge. In the spirit of community, their services brochure acknowledges that “everyone needs help with something sometime, and we want helping each other to become a habit.”

“What's the use of a house if you haven't got a tolerable planet to put it on?”

~ Henry David Thoreau

F. Childcare

Child Care Facilities Total seats by provider type by town			
	Registered In-Home	Licensed In-Home	Center
Chelsea	12	0	75
Bethel	24	0	80
Randolph	54	0	177
Royalton	12	12	34
Strafford	6	0	13
Tunbridge	**0**	**0**	**0**
Vershire	6	0	0

Figure 13 - Source: TRORC Childcare Facilities Inventory, 2003

According to TRORC's 2003 inventory of registered childcare facilities, Tunbridge has no registered or licensed childcare services. Most residents currently arrange for care with relatives, or take their children to childcare facilities beyond the borders of Tunbridge to neighboring towns like Chelsea and Royalton. According to the 2000 U.S. Census, there were 184 children between the ages of 1 and 9 in Tunbridge. During the community workshops conducted while writing this document, citizens stated that they would like to have more local options for childcare.

For children in the Tunbridge school system, there is the option of participating in an after-school program. As of January of 2007, there were 30 children enrolled in the program, which offers kids math, reading and physical-education components. The program was originally funded by a 3-year "21st century" grant awarded in 2004. At this time, the program manager is currently trying to secure funding to continue the program. Because our current economy requires that both family members work, programs such as this one are needed to fill time gap between when school gets out and when parents can be home from work. It is in the best interest of the Town to make every effort to support the Tunbridge after-school program.

In addition to concerns about the availability of affordable housing for purchase and affordable rental or transitional housing, the lack of available childcare may be acting as a disincentive for young families to move to Tunbridge.

G. Goals, Policies and Recommendations for Action

Goals

1. To provide the opportunity for Tunbridge residents to have access to affordable housing.
2. To encourage the retention of existing housing and construction of new housing that meets the natural population growth.
3. To encourage the preservation of historic structures in ways that appropriately serves the need for housing.
4. To encourage the creation of additional rental properties throughout Town, provided that they do not put an undue burden on Town services and facilities.
5. To encourage the development of affordable senior housing within the Town.

6. To support the creation of a committee to further investigate the need for affordable housing in Tunbridge.
7. To encourage the use of accessory apartments.

Policies

1. It is the policy of the Town to ensure that the timing and rate of new housing construction or rehabilitation does not exceed the community's ability to provide adequate public facilities (e.g. schools and municipal services).
2. It is the policy of the Town to keep housing affordable by encouraging accessory apartments and clustered developments.
3. It is the policy of the Town to encourage the location of future housing so as to complement existing or planned employment patterns, travel times, and energy requirements.
4. It is the policy of the Town that the location of housing, related amenities, and land uses should be planned with due regard to the physical limitations of the site and its proximity to current or planned public and private services such as roads and commercial/service centers.

Recommendations for action

1. Apply for grant funding to conduct a housing needs assessment in Tunbridge.
2. Investigate the creation of a housing and conservation fund that would be funded through a .01% property tax in an effort provide land for affordable housing.
3. Apply for a mini-grant to create an educational pamphlet about how to become a landlord and the issues associated with it.

"… I believe a lot of people share my feelings about the tragic landscape of highway strips, parking lots, housing tracts, mega-malls, junked cities, and ravaged countryside that makes up the everyday environment where most Americans live and work. A land full of places that are not worth caring about will soon be a nation and a way of life that is not worth defending."

~ James Howard Kunstler , The *Geography of Nowhere (1993)*

VI. Education

A. Introduction

The Tunbridge Central School is located on Route 110 in North Tunbridge Village and offers education for grades K-8.

The total staff consists of 25 employees, 8 of which are full-time teachers. See Appendix B for additional information on education resources.

B. Student Enrollment

Enrollments of students in the Tunbridge Central School are reported annually to the Vermont Department of Education. Based upon annual student resident counts from the Department, average daily membership (ADM) at the school for grades (K-8) in recent years has been as follows:

Fiscal Year	Students Enrolled
2006-2007	107
2005-2006	120
2004-2005	132
2003-2004	138
2002-2003	139

Figure 14 - Source: Vermont Department of Education

Enrollment has been slowly declining, which is consistent with the Vermont educational system on the whole. Tunbridge has been struggling to find a way to maintain the high quality of education that they offer in the face of increasing costs of special education and declining enrollment.

At the Tunbridge Central School there is a 12:1 student to teacher ratio, which is slightly more than the statewide average of 11.28:1.

Secondary School Enrollment

Because Tunbridge does not have a secondary school, students who graduate from the Tunbridge Central School have the option of tuitioning at neighboring high schools in the region. According to the 2006 Tunbridge School Report, students are tuitioning to public secondary schools in Chelsea, Hartford, Randolph, Royalton, Whitcomb, Northfield, Mt. Hermon and the semi-private Sharon Academy and Thetford Academy.

C. School Building

The Tunbridge Central School building was originally built in 1954, and additions were added in 1987 and 2000. One of the additions added recently was a multi-purpose room, which is made available for town functions such as Town Meeting and for recreational activities such as community basketball and volleyball. The 1954 section of the building is clearly aging. There have been some minor issues with regard to air quality in that portion of the school. In the long term, work will need to be done to upgrade this section of the school. Otherwise, the school is in good condition.

D. 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.

Policies

1. Land development that is likely to result in large numbers of school children must be phased or planned so as to not place an undue financial burden on the capacity of the Town to provide educational services.

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

"Planning is bringing the future into the present so that you can do something about it now"

~ Alan Lakein

VII. Utilities and Facilities

A. Town Offices

This building was originally known as the Market School and was the first two-roomed schoolhouse in Tunbridge. It was built in 1904. Until 2000, half of the building was used by the Tunbridge Library. It was renovated in 2001 when the Library moved out. Currently, the building houses the Tunbridge Town Offices including the Town Clerk and the Town Listers office. The building is in good shape for its age. In 2006, the Town Hall, the church, and the Town Offices were all attached to the Union Agricultural Society's well.

B. Town Hall

The Tunbridge Town Hall was built in 1840. It is generally used for public purposes such as Town Meetings, the Memorial Day Services, local theatre groups and other community programs like "bone builders," but it does get rented for weddings and parties as well. The availability of a fully functional kitchen in the basement level helps make these events possible.

The building has recently been upgraded with funds from an Accessibility Modification Grant through the Vermont Community Development Block Grant program as well as countless donations of money, labor and materials. Renovations include a new heating system for the entire building and upgraded handicapped accessibility, plumbing and electrical in the downstairs meeting area. The Town Hall committee has installed a handicapped accessible elevator in the facility to allow better access to the upstairs main hall. The recent upgrades to the building have greatly improved its usability.

In general, the building is in excellent condition, particularly due to the recent renovations. The upstairs hall area of the building has the classic large windows of a hall. These windows are very old and inefficient. Upgrading to more modern and efficient windows, while still maintaining the historic appearance of the building, would benefit the hall.

C. Town Garage

The Town Garage is located at the end of Recreation Road, just north of Tunbridge Village. It is purely a functional building. It is in good condition and is adequate for the needs of Town. Aside from the need for a small addition to house flammable materials in a safe manner, the building is only in need of minor improvements.

D. Tunbridge Public Library

The Tunbridge Public Library offers many things for Tunbridge residents: a collection of audio, video, 60+ magazines and over 9,000 books; interlibrary loan; computer and internet access; and access to the Vermont Online Library. According to a 2006 public libraries survey, there are 10,883 library visits per year at the Tunbridge Public Library, and over a thousand registered borrowers.

In addition to offering books and other services typically found at libraries, the Tunbridge Public Library hosts a number of events, including "Winter Evenings", a series of six lectures featuring guest speakers, "Thursday Night Stories," and a summer reading program. The library also features art exhibits in the "ArtSpace" area and co-sponsors programs with the Tunbridge Historical Society. The

diversity of community events and services offered by the library make it a center for volunteerism in Tunbridge.

Built in 1829, the former Gibbs building is in excellent condition. This building was donated to the Town by the Union Agricultural Society and upgraded in 2001 (including an addition) to accommodate the library. A new well was drilled in 2005 to upgrade the water supply for the Library.

The organization is supported in part by a yearly budget item in the Town budget. In 2006, the Library received $28,775 in support from the Town and offset the remaining budget needs with fundraising, support from Friends of the Library, grants and other gifts.

E. Public Cemeteries

There are 20 cemeteries in town, 17 of which are public. Town responsibilities in these cemeteries include mowing and other general maintenance, and restoration. In response to a need for additional burial space, the town is currently developing an additional public cemetery on Russell Road.

F. Solid Waste Services

Tunbridge is a member of the twenty-two town Central Vermont Solid Waste District. The Town and the Solid Waste district have a unique arrangement whereby Tunbridge utilizes their own transfer station for both trash and recycling. They contract with Northeast Waste Services (Cassella, Inc.) for pickup of both trash and recycling. The Solid Waste District assists the Town with arranging contracts for these services and handles the final destination of all trash leaving Tunbridge.

In 2006, the Town paid $24,588 for NE Waste Services to collect trash from the Tunbridge transfer station. Some residents contract directly with NE Waste Services for curbside pickup of trash, but most bring their trash to the transfer station. Recycling is handled at the transfer station and is done free of charge with the exception of metal and tires.

There have been discussions with CVSWD about consolidating transfer stations in the area. It is possible that Chelsea and Tunbridge might eventually use the same location for trash handling. If the Tunbridge transfer station were to service Chelsea as well, it would most likely need some upgrades. At this writing, the discussions have been put on hold.

G. Water Supply and Wastewater Treatment Facilities

The Town has no public water or sewer system. Individual wells supply water, and septic systems handle sewage disposal. Design and construction of on-site sewage systems requires a permit issued by the Town Health Officer.

The Town does not plan to engineer or construct either of these types of facilities in the next five years, with the exception of the water supply for the Tunbridge Town Offices, Town Hall and Library. As noted above, attempts to drill a well for the three public buildings were only partially successful. The library has a well of its own, with the Town Offices, Town Hall and Church attached to the Union Agricultural Society's well.

H. Telecommunications and Internet

Verizon covers land-line telecommunications services for the entire town, and all but a few homes have telephone service. There is little in the way of cell phone coverage in Tunbridge.

High-speed internet is available to some residents in the villages through Charter Communications Cable service. DSL is not currently an option although one of the key elements to being able to access DSL, a dial center, is located in Tunbridge Village. In theory, if Verizon were to upgrade the switches at this dial center, anyone within 3 "line-miles" could have access to DSL. Verizon does not currently have plans to make this upgrade.

Orange County on the whole is poorly served by high-speed internet providers with only 42 percent of the population having access to either form of broadband service. The best option for Tunbridge residents who are not located in the Villages is high-speed internet access via satellite, but those services are more expensive than DSL or cable and they require an unobstructed view of the southern sky.

A 2005 agreement between cable company Comcast and the State of Vermont will require them to complete line extensions promised by Adelphia, whom Comcast recently purchased. These extensions will hopefully improve broadband access in Tunbridge. Another growing option is wireless broadband. WaveComm has an access point installed at the top of Spring Road for wireless coverage. This is line of sight transmission being used mostly by Strafford and only covers a small amount of Tunbridge. The Tunbridge Broadband Committee is part of a five town group including Tunbridge, Chelsea, Vershire, Royalton, and Thetford. At this time, they are currently negotiating with suppliers to bring comprehensive quality coverage at moderate pricing to our area. They feel that servicing as close to 100% of the households will be necessary for home businesses, telecommuting and distance learning. Band widths of 1.5 megabytes a second and higher are necessary for video conferencing and many other modern services. DSL and satellite can but does not necessarily achieve these speeds. New wireless equipment is likely to have this as a minimum.

Although not currently available in Tunbridge, there are several active broadband programs in the nearby towns of Thetford and Fairlee, and there is a growing discussion about it along the Route 110 corridor in Chelsea and Tunbridge.

"Every decision you make—every decision—is not a decision about what to do. It's a decision about Who You Are. When you see this, when you understand it, everything changes. You begin to see life in a new way. All events, occurrences, and situations turn into opportunities to do what you came here to do."

~ Neale Donald Walsch

VIII. Recreation

Until about 2000, Tunbridge recreation programs were initiated and run by a Recreation Committee made up of volunteers. Funds were raised through raffles, donations, and a yearly chicken pot pie dinner. The original Recreation Committee built a playground, a baseball field, and a pool to be used for swimming lessons (this was in response to the drowning death of a Tunbridge child). In addition to the summer swimming lessons, recreation programs included sports programs, occasional craft activities, and at least one short-lived attempt to provide a summer day camp.

When the number of active committee members decreased substantially in the late 1990s, the Committee voted to disband, and recommended to the Town's Selectboard that the Town hire a recreation director and support the position, and programming, through the Selectboard's budget. The current total recreation budget is $6,000 per year; half of this amount is the stipend for the director (the person currently in the position uses the title "Recreation Coordinator"). Recreation programs include soccer and basketball for children in the kindergarten through fourth grades, coordination of volunteers and transportation to a local "learn-to-ski" program, and most recently the construction and maintenance of a 50-foot by 100-foot skating rink. The soccer and basketball programs rely on parent and community volunteers to help out as coaches and referees, and the rink project relied on diverse community resources including the school, the Fire Department, the directors of the Tunbridge Fair, volunteer workers, and generous donations from community members in response to a direct-mail appeal.

The pool has fallen out of use in recent years as a result of inattention and a concern for water quality. Currently the pool is fed from a nearby brook, which appears to be subject to direct contamination from a source of animal waste; because the pool is not sealed, chlorine treatment would be less effective and would also be a potential environmental hazard. For the last two years, the recreation program has paid for Tunbridge children to take swim lessons at the pool run by the Bethel recreation program. Options for the revival of the Tunbridge pool include eliminating the most obvious source(s) of bacterial contamination and continuing to rely on the brook for a constant flow of water, or improving the pool's ability to hold water by rebuilding it with a liner (and installing a water treatment system). While the latter option is clearly the more expensive, it is the one most likely to produce a reliable recreation resource for the Town.

Public meetings held by the Planning Commission in April, 2004, showed a strong interest in reviving the pool. Attendees identified the pool as a community center, and pointed to the importance of swimming lessons for children. The possibility was raised of building a new pool in cooperation with the Town of Chelsea. At the meetings, another area of significant interest was bicycle and walking paths. One specific location identified for a path was between the villages of Tunbridge and North Tunbridge; also discussed as trail sites were old roads, snowmobile trails, and the town forest. The sense of community created by recreation activities was noted, along with the recognition that expanded recreation programs would increase connections between people. Other surveys have suggested a strong interest in summer programs, especially among parents of school-age children.

There is a general sense that many opportunities exist for broadening the scope of recreational activities in town, and also broadening the age range that is served. Success in achieving these general goals will require connecting with the instinct for volunteerism that is still a strong part of the

Tunbridge community, while at the same time building acceptance for increased use of town funding for recreation programs.

Goals

1. To establish summer recreational programs for school-age children.

2. To revive the Tunbridge pool to provide a locally based swim program and to serve the broader Tunbridge community.

3. To establish recreation trails for town residents with a "carry-in, carry-out" waste policy.

4. To continue the tradition of unposted land remaining open for recreational use when used in a responsible, appropriate manner.

"We never know the worth of water till the well is dry." ~ Benjamin Franklin

IX. Emergency Services

A. Tunbridge Volunteer Fire Department

The Tunbridge Volunteer Fire Department (TVFD) is a private organization that serves Tunbridge and is part of the mutual aid network. It also responds to all automobile related rescue squad calls. In 2006, the TVFD responded to 26 calls, which included structural fires, chimney fires, motor vehicle accidents and mutual aide calls.

Staff

The TVFD is staffed by 18 firefighters. There is always a need for additional volunteers to serve as firefighters, to help raise money, and to help care for the equipment, but at this point in time the TVFD is having a difficult time recruiting new members. This is a common problem statewide. Changes in Tunbridge's demographics, the effect of living in a bedroom community, 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 staff of the fire department has taken steps to try to encourage people to become involved with the TVFD, and is interested in any ideas or suggestions that would help improve volunteerism.

Fire Station

The Tunbridge Fire Station is located at the corner of Monarch Hill Rd. and Route 110. The building itself is quite old, but part of it was damaged in a flood during the early 1990's and was rebuilt. The most recent improvement to the building was the installation of a generator. The building does not meet the needs of the TVFD, but like most volunteer fire departments they make do with what they have. The building is undersized, barely allowing for all of the fire and rescue vehicles to fit into it. Additionally, the building lacks floor drainage making the cleaning of vehicles during the winter impractical. In addition to housing the four Tunbridge engines, the building also houses a rescue vehicle for the First Branch Rescue Squad.

Vehicles

The TVFD owns four trucks:

- Engine #1 – A 1991 Pierce Arrow pumper truck, rated capable of pumping 1500 gallons per minute
- Engine #2 – A 1979 International pumper truck, rated capable of pumping 1000 gallons per minute (to be replaced in 2007)
- Engine #3 – A 2004, 2000 gallon high volume tanker
- Engine #4 – A 1986 International pumper truck, rated capable of pumping 500 gallons per minute

All trucks are in good working condition, with the exception of the 1979 pumper truck, which is deteriorating due to its age.

Funding

The TVFD receives some funding from the Town, but most funding comes from either grants or donations. Taxpayers pay for the department's operating expenses, and large purchases are made out of the Town's capital budget. In 2006, the Town paid $30,000 for fire department expenses, plus an additional $40,000 toward the replacement of Engine #2.

Comparative Fire Department expenditures, surrounding towns.

Town	2005 Budget
Chelsea	$65,550.50
Royalton	$39,000.00
Strafford	$26,000.00
Tunbridge	$27,000.00
Vershire	$23,072.00

Figure 15 - Source: 2005 Town Reports, Chelsea, Royalton, Strafford, Vershire and Tunbridge.

Projects

With assistance from the Two Rivers-Ottauquechee Regional Commission, the TVFD implemented a comprehensive emergency plan for the Town in 2005. This plan will be an essential tool for first responders if an event occurs during the Tunbridge World's Fair, but is flexible enough to apply to the entire town during any major incident.

B. Police Protection Services

Tunbridge has two constables, each elected by town vote. Police coverage in Tunbridge is provided primarily by the State Police barracks in Royalton. Royalton is at least twenty minutes from Tunbridge, which means that response time in the event of an emergency can be poor. The Orange County Sheriff's Department does not cover Tunbridge because they require payment for this service.

C. Emergency Medical Services

Emergency medical transportation is provided by First Branch Ambulance and Rescue in Tunbridge (FBAR). In 2006, FBAR responded to 53 calls in Tunbridge. EMTs in Tunbridge respond to calls using the Rescue truck and are trained in vehicle extrication skills.

FBAR serves Tunbridge and Chelsea, and is overseen by a board of directors, including at least two representatives from each town. Although FBAR is overseen by a single entity, there is a division between the Ambulance and Rescue. The Rescue squad is based out of Tunbridge and shares limited space with the Tunbridge Volunteer Fire department. The Ambulance is located in Chelsea. Both sections of FBAR have their own director.

Aside from space issues at the Tunbridge Fire Department, FBAR has indicated the need to replace their rescue vehicle, which is at least 25 years old.

Funding for the FBAR is provided by yearly payments from Chelsea and Tunbridge. In 2006, each town paid $11,000. Additional operating capital is acquired through grants, donations and fund raising events.

X. Transportation

A. Introduction

The Vermont Agency of Transportation and the Tunbridge Board of Selectmen jointly determine our road classification. There are four road classifications used by the State of Vermont. The classification determines the rate of State financial aid in the repair and maintenance of Town roads (there is no State aid for Class Four roads). The classes are:

- Class 1: town highways that form the extension of a state highway route and that carry a state highway route number.
- Class 2: important town highways, often paved, with the primary purpose of linking towns and high traffic areas such as village settlements and state highways.
- Class 3: all traveled town highways other than Class 1 or Class 2 highways that are negotiable under normal conditions, all seasons of the year by a standard manufactured pleasure car.
- Class 4: all other town highways on which public use is limited.

B. Town Roads and Road Maintenance

Tunbridge has a total of 78.64 miles, excluding Class 4, of Town roads, consisting mostly of Class 3 roads. This does not include the 7.93 miles of Vermont Route 110 that runs through Tunbridge and is maintained by the State. The total mileage of roads in Tunbridge is slightly higher than the average of 65 miles per town in Orange County.

Class	Mileage
1	0
2	4.84
3	65.92
4	13.17

Figure 16 - Source: VT Dept. of Transportation

Most of Tunbridge's residential properties are on Class 2 and Class 3 roads. There are about 60 residential properties on Class 4 roads in Tunbridge, two-thirds of which are either full time residences or second homes. In general, it is the policy of the Town to limit the amount of maintenance that occurs on Class 4 roads. Plowing does not occur on Class 4 roads.

The quality of Town roads and their level of maintenance affect not only the Town tax rate, but also the type and rate of Town development. Road improvements may make Tunbridge a more attractive place of residence and increase the commuter population. This, in turn, may increase demand for Town services and thus additionally raise the tax rate.

Overall the condition of the roads in Tunbridge is good.

Tunbridge buys gravel for its roads from Chelsea. As of the writing of this Plan, the cost is approximately $15 a yard, including trucking, but escalating gas prices have a strong impact on this price. Tunbridge uses approximately 5000 yards of sand a year.

The Town owns several trucks that are used in the maintenance of the roads:

- 1988 310 John Deere backhoe
- 1996 Ford dumper/plow/sander
- 1998 Ford dumper/plow/sander
- 2005 John Deere 672 grader
- 2006 International dumper/plow/sander

The highway budget has consistently been one of the largest parts of the Town's budget. In 2005, the actual money spent on highways was $292,200. The highway budget is not entirely funded by Town revenues. State Aid contributed $110,000 or 38% of the total for 2005. The Tunbridge Highway Fund does not receive Federal Revenue Sharing funds.

A strong majority of citizens who commented during the 2005 public workshops indicated they wanted Tunbridge to stay largely the same, including issues relating to roads and transportation. Tunbridge has a strong desire to maintain its rural roads, especially Route 110 as a low volume, secondary road.

C. Bridges

Tunbridge has five covered bridges (all listed on the National Register):

- Cilley (or Lower) Bridge — Southwest of Tunbridge Village
- Flint Bridge — Northeast of Tunbridge Village (off VT 110)
- Larkin Bridge — North Tunbridge (off VT 110)
- Howe Bridge — South of Tunbridge Village (off VT 110)
- Mill (or Hayward & Noble or Spring Rd.) Bridge — West of VT 110 on Spring Road

These bridges are important to the history of Tunbridge as well as adding to the rural character of the Town. They are maintained through a joint collaboration between the Town of Tunbridge and the Vermont Agency of Transportation (VTRANS). Much of the funding to rehabilitate and maintain these historic bridges comes from the State in an effort to preserve historic structures and help support tourism. Vermont's covered bridges are a popular tourist attraction.

There are twelve bridges in Tunbridge that are maintained by VTRANS. The rest of the bridges in Tunbridge are on town roads and therefore are maintained by the town road crew.

D. Ancient Roads

The legal status of so-called "ancient roads" has become increasingly contentious in many Vermont towns. Points of view diverge sharply on the access rights to these hard-to-locate roads. To some, these roads should remain a public asset even though they have not been maintained or used as a road over many decades, even centuries. To others, the town should no longer retain public rights to lands that are not in active use and have been presumed by landowners to be privately held.

In 2006, the Vermont General Assembly passed H.701, now Act 178, which establishes a process for towns to determine the legal status of their roads. The Act allows towns the opportunity and incentive to identify and add to their town highway map all town highways and trails that it decides to retain as a public right-of-way. It also establishes a public discontinuance process that a town's legislative body determines are no longer desired as public rights-of-way. The legislation includes a funding source and grant program to assist towns with research and mapping of of town highways.

A town has until July 1, 2009 to add unmapped town highways that are not observable by physical evidence of their use onto their town highway map in order to retain those roads as town highways. After that deadline, those unobservable town highways become *unidentified corridors.* A municipality is not required to maintain an unidentified corridor, and it may be used by the public in a manner consistent with its use within the last ten years. On July 1, 2015 all *unidentified corridors* (that is, all properly laid-out, but unobservable and unmapped town highways) are automatically discontinued. Between 2009 and 2015, a town may reclassify an unidentified corridor as a class 1, 2, 3, or 4 town highway or a trail, and must follow the current process as contained in statute (19 V.S.A. Chapter 7). This process may include landowner compensation. If an unidentified corridor or any other highway or trail does not appear on a town highway map by July 1, 2015, it will be considered discontinued and will legally belong to the owners of the adjoining lands. (from Ancient Roads Research and Mapping Grant Program FY07)

The Tunbridge Ancient Roads Committee believes that these roads are an important part of our local history and that the community will share their interest in knowing where they are. The project is being approached with the understanding that there must be balance between respect for landowners who presume ownership of these rights-of-way, and the manner in which the public may want them to be used in the future.

E. Public Transportation

Tunbridge, like most Vermont Towns, lacks public transportation. Stagecoach, Inc. offers limited public transportation in the form of special requests for individuals who need transportation for medical reasons, etc. Neighbors Helping Neighbors also offers some limited transportation opportunities.

Given that much of Vermont is aging, 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. See Appendix B for additional transportation information.

F. Goals and Policies

Goals

1. To maintain a transportation system that is safe, efficient, meets the needs of residents, and complements the other goals and policies of this Plan.

2. To ensure that future development does not unnecessarily or unreasonably impact the public investment in Town and regional transportation systems or facilities, including highways, bikeways, trails and rail.

3. To support local, regional and statewide efforts to provide public and private transportation systems that meet the needs of all population segments and not just those who use automobiles.

4. To minimize transportation energy consumption by encouraging carpooling and creative alternatives for sharing transportation resources.

5. To provide pedestrians with safe areas to travel within the Villages of Tunbridge and North Tunbridge, such as sidewalks and bike paths.

6. To provide regular maintenance and upgrades to road equipment and facilities, provided that the costs do not put an undue burden on the people of Tunbridge.

7. To recognize the importance of balancing the need to have safe roadways with the desire to maintain appropriate widths and the health of existing vegetation in its role as a structural component of the roads.

Policies

1. Prior to a final decision to proceed with a major capital transportation project, policy makers should first analyze the project against reasonable alternatives and include public input. In examining the alternatives, investigation should focus on the environmental, energy, social and investment costs and the extent to which such costs meet the goals and policies of this Plan.

2. Any new access, new construction, change of use, and any development of a land parcel that would create impacts on Tunbridge's road system shall be reviewed by the Town. Where such development requires improvements to Town highways, such costs shall be borne by the developer, in consultation with the Selectmen, and the Selectmen shall have sole power to change the classification of the road.

3. It is the policy of the town to minimize curb cuts to insure the proper function and performance of a town highway.

4. It is the policy of the town that the design of access roads and related facilities provide for proper alignment of new or relocated driveways along a roadway.

5. The Town shall seek public input in any decision to substantially change the maintenance level or surface treatment of any town road.

6. The Town, as written in V.S.A. Title 19 Section 310, does not maintain Class 4 Highways, excepting bridges and culverts. The policy of the Selectboard is that before the town would consider adopting a new road or upgrading an existing highway, the abutting property owners shall be responsible for the cost of improving and/or building the road to Town specifications. Final decision regarding the nature of the improvement rests with the Selectboard.

7. Given the interest in and benefits from biking, hiking, snowmobiling, cross-country skiing, and similar outdoor recreational activities, the Town should, as an alternative to complete discontinuance of a highway, give full consideration to preserving Class 4 roads for recreational use by downgrading their status to a legal trail and thus retaining the public’s interest in them.

8. An integral scenic element of the rural countryside is the network of back roads comprising the town's highway system. These byways are both visually and economically important to the Town. If improvements are needed to accommodate increased traffic, the Town shall consider the relationship of the road to the surrounding features of the landscape.

9. Strip development is discouraged as a land use pattern. Such development occurs in a linear path along a right-of-way which often restricts visual and physical access to interior lands.

10. The health of trees along town roads shall be periodically reviewed. Trees that are unhealthy or otherwise pose a substantial risk to travelers shall be removed.

"In the end, our society will be defined not only by what we create,

but by what we refuse to destroy." ~ John Sawhill, Nature Conservancy

XI. Agriculture

A. Introduction

For the past several decades, the perception has been that Vermont is losing its farms. In fact, this isn't the case. The UVM Center for Sustainable Agriculture indicates that, according the 1974 Census of Agriculture, there were just fewer than 6000 farms in Vermont. By 2002, that number had increased by ten percent. The reality is that Vermont has been losing *dairy* farms at a rapid rate (although cow numbers have remained constant); however, those farms have been replaced by other types of farming. Three quarters of Vermont farms are diversified farms.

In 2002, USDA data indicates the estimate agricultural revenue in Vermont to be $474.6 million per year. However, in 2005 the Vermont Sustainable Agriculture Council published a report entitled "Vermont's Agriculture: Generating Wealth from the Land". The report analyzed the value of farming in Vermont by using a unique methodology that collected data in two ways: researchers used estimates from a variety of organizations and individuals (attempting to obtain a qualitative picture) of economic activity affected by farming, and the commonly used IMPLAN modeling software.[1] Using this expanded mix of data sources, the report estimated the 2002 actual value of farming in Vermont was about $2.6 billion a year.

Many other businesses in Vermont depend on the "farm economy." According to the previously mentioned report, "just under one third of all of Vermont's farm production, or $196 million in food, is used directly for bottled milk, cider, ice cream, cheese, meats, yogurt, etc. by Vermont's farm-related food industry, which produced $1.05 billion worth of products in 2000." The farm-related food industry is clearly connected to the farm economy.

Though federal law recognizes the importance of farmland and farmland protection, local planning and zoning regulations often neglect the issue of prime agricultural land and the conflicts that arise between expanding development and successful farming.

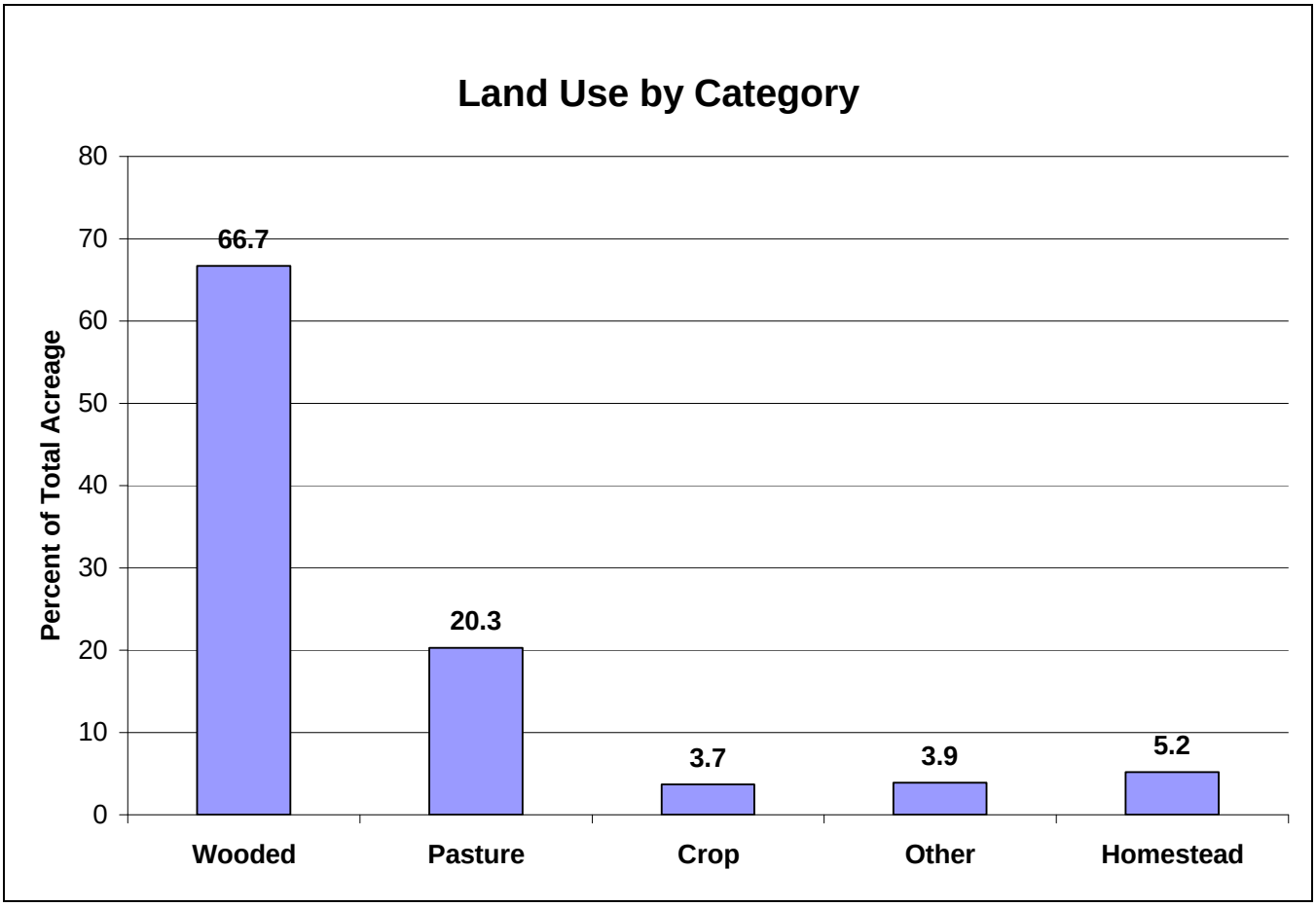
The distinctiveness of the working landscape gives Vermont its beauty. Farms provide open space for wildlife habitat, scenic views and a connection to the land that is hard to find in other places. They also help our towns avoid sprawl and maintain small town and village settlement patterns. As such, to continue to receive the benefits farming has to offer, a community must encourage farming. During several instances at the April 2005 Tunbridge Planning Commission workshops, farmers pointed out that if residents want the landscape to remain open, then someone has to be actively working that land, whether they are grazing cattle on it, or growing hay or other products.

Farming is important to the residents of Tunbridge. It is fundamental to the Town's history and to its future. Citizens believe farming and agriculture must be protected and encouraged to grow. See Appendix B for agricultural resources and other sources of support.

[1] IMPLAN allows the user to obtain a specific estimate of both direct and indirect economic impacts of agriculture. The economic data for IMPLAN comes from the system of national accounts for the United States based on data collected by the U. S. Department of Commerce, the U.S. Bureau of Labor Statistics, and other federal and state government agencies.

B. Present Day Agriculture in Tunbridge

In 2006, as part of the Municipal Planning Grant that funded the rewrite of this Plan, the Tunbridge Planning Commission, in conjunction with the Two Rivers-Ottauquechee Regional Commission, seventh grade students at the Tunbridge Central School and a number of volunteers conducted a survey of working lands. The complete survey can be found as Appendix A at the end of this document.



Source: Tunbridge Agricultural Survey

Records maintained by Tunbridge listers indicate that at least 53% of the land (approximately 15,000 of Tunbridge's 28,000 acres) in Tunbridge is in some form of agricultural use. According to the U.S. Census of Agriculture, there were 35-40 farms (including all types of farming) in Tunbridge in 2002. The 2005 Ag survey numbers indicate that this number is fairly accurate today.

C. Types of Farming

Dairy

Dairy is the dominant form of agriculture in Vermont. Presently, there are nine active dairy farms located in Tunbridge, and an additional four dairies that work lands in Tunbridge but are based in a neighboring town. These dairies work approximately 60-70% of the open lands in town. This land gets used primarily for grass/legume production, both hay and pasture, with roughly 10% of Tunbridge's open land devoted to corn production.

According to David Lane, Deputy Secretary for Agricultural Development, the average dairy herd in Vermont is approximately 120 cows. In Tunbridge, the average herd is only 40 to 50 cows. While this may somewhat be dictated by the topography of Tunbridge, which is more hilly than the areas of Vermont that dominate the dairy industry, the smaller herd size indicates that viable Tunbridge dairy farms are very efficient.

According to the UVM Agricultural Extension service, 5% of Vermont-produced milk is sold and consumed in the state as fluid milk. About another 45% is used for manufactured products by milk processors in Vermont. The remaining 50% of Vermont-produced milk is shipped out of state as fluid milk. Federal milk orders establish the minimum price paid to dairy farmers sufficient to assure an adequate supply of fresh milk for consumers. Nine out of ten gallons of Vermont milk is sold to plants and dealers regulated under the Federal milk order system.

The use of milk in value-added products such as cheese and ice cream has a large impact on Vermont's economy. The 1997 economic census indicates that Vermont had 26 companies that used milk in some form of dairy product manufacturing process, with shipments valued at over half a billion dollars. The Vermont Sustainable Agriculture Council's report lists mozzarella and cheddar as the two leading cheeses produced in Vermont by volume, but more than 15 other varieties are manufactured in Vermont as well. Additionally, other products, such as ice cream, butter, powdered milk, yogurt, cottage cheese and infant formula also use Vermont milk.

Because nationwide pressures can have a strong impact on the average price per one-hundred weight of conventional milk, some farms have worked through the rigorous process of becoming certified organic. Although the process of switching from conventional to organic is expensive, organic milk prices have proven to be much more stable than conventional. In 2006, The UVM Center for Sustainable Agriculture reports that organic milk distributors Horizon and Hood (Stonyfield Organics) last year offered flat price of $26 per hundred weight when compared to non-organic rates which, as of May 2006 were around $15. Being able to get a consistent price for their product can be very important to dairy farmers.

According to the Northeast Organic Farming Association (NOFA-VT), there were 113 organic dairy producers in Vermont as of 2006. This number represents approximately 10% of the total number of dairy farms in the State. Out of the 9 active dairies in Tunbridge, there are currently 6 certified organic farms.

In 2006, due to extraordinarily low conventional milk prices, NOFA-VT has seen a huge jump in farms interested in converting from conventional to organic. If all milk producers were successfully certified, the number of organic dairies in Vermont would double.

Beef

Staff from the UVM Extension indicate that beef animals are raised on approximately 1000 farms in Vermont, and there are several located in Tunbridge. The Vermont Sustainable Agriculture report notes that 90% or more of the beef producers sell their meat in Vermont, but most of the live animals produced in Vermont are sold wholesale out of state.

Organic beef producers are few – there are only 24 in the State of Vermont. Demand for organic meat is increasing dramatically, however. There are presently two certified organic beef producers in Tunbridge.

Small Ruminants (Sheep and Goats)

In the early 1800s small ruminants outnumbered the population of Vermont five to one and were responsible for much of the land in Vermont being open pasture. However, the rise of the modern cow dairy pushed sheep and goats to the back of the Vermont agricultural system. Presently, though, small ruminants are seeing resurgence. According to estimates in 2005, the number of sheep in Vermont fluctuated between 16,000 and 20,000. In an article published in the UVM View in 2005, writer Cheryl Dorschner explains that "the renewed importance of grassland to the region is attributed to many factors: growing popularity of farmstead cheeses, which has led to the increasing popularity of seasonally pasture-fed sheep and goats; more demand and higher prices for organic and grass-finished meat products; and lifestyle and value changes among consumers." Although the impetus to raise sheep in the 1800s was pushed by the need for wool, modern times have moved the small ruminant farm in a different direction – meat. Carol Delany from the UVM Center for Sustainable Agriculture indicates that there is more demand than supply for lamb.

The topography of Tunbridge is such that it lends itself to the small ruminant. The hilly terrain is easily navigated by both goats and sheep. Information collected from the Tunbridge Ag Survey show there are currently six farms in Tunbridge that raise ten or more sheep, with the largest herd being sixty.

Statewide, there are few farms that produce small ruminants for meat. According to NOFA-VT, there are only 7 certified organic small ruminant meat producers in the State.

Maple Sugaring

Maple syrup has long been associated with the State of Vermont. The history and tradition, coupled with the market image surrounding maple syrup, make it a popular Vermont branded product. The Vermont Sustainable Agriculture Council's report notes that Vermont was the largest maple syrup producing state in the nation, producing 22% of all U.S. Syrup. Direct retail sales of maple syrup in Vermont are valued at $15 million.

It is very common for farms of all types to pursue maple sugaring as a way to supplement their income. In Tunbridge, for example, there were 19 farmers who reported sugaring as one of their endeavors in the Ag Survey.

In the past decade, regulations have been put in place to allow for the certification of organic maple sugar. While many people believe it is a simple process, in order to be certified, your sugarbush must be free of pesticides and formaldehyde must not be used when tapping trees. There are additional limits on the number of taps allowed per tree imposed under this certification.

Vegetable and Berry Farming

In 1993 the UVM Extension and Agency of Agriculture conducted a survey of vegetable and berry growers. The results of the survey estimated the value of the industry to be $14 million. According to the UVM Center for Sustainable Agriculture, this segment of Vermont's agricultural business has been growing at an average of 10 to 20% annually. The local produce provided by these growers make up the majority of all foods found at farm stands, farmers' markets and local food co-ops.

Based on the inventory collected during the Tunbridge Ag survey, there are three farms that list their "primary endeavor" as vegetable growing.

Organic Farming

Organic farming is a rapidly growing sector of agriculture in Vermont, and according to the Northeast Organic Farmers Association – Vermont, the state has a greater proportion of organic to non-organic farms than any other state in the nation. NOFA-VT estimates that in 2004 gross sales from organic farms was at least $19 million; and Vermont Organic Farmers estimates that in 2006 gross sales from organic farms was over $32 million, and $80 million including both producers and processors of organic products.

Because of strict requirements regarding the use of fertilizers, hormones and pesticides, organic products are generally considered healthier and more natural than their conventional counterparts. Organic livestock grown for meat does not contain antibiotics. Organic vegetables are grown in healthier soil and contain higher levels of nutrients than conventionally grown vegetables. Organic fruits and vegetables test at minimal or zero pesticide residue levels.

Farms that wish to have their product bear the "certified organic" label must meet the requirements set forth by the USDA in 2002. Vermont standards, set by NOFA-VT are actually more stringent. Six farms in Tunbridge reported that they have been or are in the process of becoming "certified organic" by NOFA-VT.

D. Agricultural Pressures

Taxes

High property taxes put an undue burden on farmers. Because the size of a property tax bill is based on the value of the land owned, and not the amount of money earned on that land, it is not based on the landowners' ability to pay. Unless a farmer's property is enrolled in Vermont's current use program, this property is assessed at market value. This can create special hardships for farmers and others with land, but relatively low cash flow. Family-owned farms are often the hardest hit because they have assets (their land) that are valued greater than the income they can produce. Fortunately for farmers in Tunbridge, taxes are generally lower than the surrounding area (see tax chapter). However, property values in Vermont are on the rise, and as a result, there may come a time when property is so highly valued that the cost of paying taxes on it becomes cost prohibitive for the farmer.

Growth and Development

Across Vermont, the most serious issue facing agriculture is the constant loss of good farmland due to growing pressure from development. In 1974, there were 1.7 million acres of farmland. In 2005, there were 1.2 million acres statewide. The Tunbridge Ag Survey estimates approximately 15,000 acres dedicated to agriculture and forestry, greater than half of Tunbridge's 28,000 total acres. During the 2005 Tunbridge public workshops, several farmers commented that the fragmentation of farmland made it increasingly difficult to find land they could lease. This change has an impact that goes beyond agriculture. Converting tracts of agricultural land to non-farm use results in long-term consequences. Development on active farmland immediately eliminates any future agricultural productivity on the developed tract as well as the open space, and related amenity benefits that exist in the working landscape. Though restoring the agricultural viability of a residential subdivision may be technically possible, it would not be feasible due to enormous expense.

Property Values

As property values escalate, they not only increase a farmer's tax burden, but they put greater pressure on them to sell their property. In general, much of a farmer's wealth is invested in his or her land. For a farmer, high property values may represent an opportunity to liquidate that investment at a greater return. Given the financial difficulties that surround farming, such an opportunity can be hard to pass up, particularly if there are no younger family members who intend to continue farming. High property values also create a hurdle for young people interested in buying land for agriculture-related enterprises.

E. 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.
- Easements can increase property values on surrounding land.

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.
- Increases in property values due to conserved lands can make it difficult for residents to afford to buy property.

The Tunbridge 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.

F. Agriculture 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.

That said, the citizens of Tunbridge intend to give farming priority when development is considered. Provided that agriculturally related development does not negatively impact the health, welfare or safety of nearby residents, it should be encouraged. The noted exception to this rule might be large scale (3000 head of cattle on 3-acres of land, for example), concentrated animal feeding operations, which might be judged to have a distinctly negative impact on a diverse, robust rural character and clean environment.

G. Goals, Policies and Recommendations

Goals

1. In order to maintain the essential rural character of Tunbridge, encourage the growth of agriculture, in all its forms.

2. Encourage the growth, marketing and consumption of local foods.

3. Promote or encourage self sufficiency and sustainability through agriculture.

4. Participate in the local food web.

Policies

1. It is the policy of the Town to support agriculture provided that it is conducted at a scale that is consistent with the historical agricultural practices of Tunbridge.

2. Work with State of Vermont agencies and various farm support groups to develop viable farming opportunities in town.

3. The Town should consider offering property tax incentives to farming endeavors.

Recommendations

1. Conduct the Tunbridge Agricultural Survey every ten years at a minimum.

2. Create a farmers' market.

3. Investigate tax stabilization for agriculture at the town level.

"The trouble with land is that they're not making it anymore."
~ Will Rogers

XII. Land Use

A. Introduction

This section of the Plan describes the types and patterns of Tunbridge's current land use and discusses how the people of Tunbridge want to see land used in the future. As population increases and as more and more people discover the pleasures of living in rural Vermont, Tunbridge's rural character will be threatened. Since the 1970's Tunbridge's population has been steadily growing, and that trend will most likely continue. The terrorist attack on the World Trade Center on September 11, 2001, has contributed to an increase in the number of families from out-of-state who have either purchased second homes or moved to Vermont. This trend, coupled with the population boom and housing shortage in the Upper Valley, will inevitably cause an increase in the population of Tunbridge. These changes underscore the need to identify and develop effective growth and land use development policies that will serve the long-term interests of our community and help Tunbridge remain a small, rural Vermont town.

Population growth has slowed since the 1980s, but population is still on the rise. The State of Vermont's population growth between 1990 and 2000 was 7.8%, the Upper Valley is growing, and the impact of that growth is moving progressively north. Specifics on the percentage of growth of surrounding towns during this time are shown in this Plan in Section III.A.

B. Historic and Current Land Use

The First Branch of the White River runs north and south through the approximate center of town. Most of the town's area lies within parallel ridges east and west of the river. (A small portion lies over the western ridge on the uplands of the next valley.)

Historically, Tunbridge's land use pattern has been one of concentrated villages and diffuses residential and agricultural development. Although Tunbridge Village (also known as "Market Village") and North Tunbridge are denser hamlets of 30 to 40 principal buildings each, the majority of the population is spread throughout the town, living along the network of mostly unpaved "back roads." This has always been the settlement pattern in Tunbridge; in the 1820's the population was as high as 2003 residents, mostly living outside the villages. As an indication of these historic settlement patterns, Tunbridge once had 18 separate schoolhouses and several post offices.

As was stated in chapter one of this Plan, it is the small, compact villages and the open, working landscapes that define Tunbridge. The continued balance between the concentration of development in Tunbridge's villages and hamlets, and the residential and agricultural development of the areas surrounding the villages is essential to maintaining the rural character of Tunbridge.

Tunbridge Village and North Tunbridge are centers of public activity. The Town Offices, Public Library, Tunbridge Church, Town Hall, and the Post Office are located in the former; the school, Baptist Church, Grange, and another store are located in the latter. It is common to run into many friends and neighbors while doing errands in either village. In South Tunbridge, which has only four or five residences, the Methodist Church is active one month each summer. These types of traditional rural village development typify the rural character in Tunbridge and are encouraged, provided that they blend in with what already exists.

Some types of development will undermine rural character. Strip development, large-scale commercial development and endeavors that would dramatically increase traffic flow or use up valuable agricultural land with no regard for the natural appearance of Tunbridge are unwanted in Town. However, home businesses, light industry and developments that can contribute to the rural character within an area like Tunbridge are not only welcome, but encouraged.

Above all, agriculture defines Tunbridge as was indicated by the strong sentiments of residents at the 2005 public meetings. Because the rural character of Tunbridge is entwined with its agricultural history, agricultural businesses of appropriate size are encouraged. Residents acknowledged that without active efforts to encourage farming, the distinct appearance of Tunbridge's working landscape will not persist. The character of the town is defined in part by agriculture and those that work in related fields.

Goals

1. Continue Tunbridge's historical land use pattern of concentrated villages and diffused residential and agricultural development.

2. Maintain rural character through balance of developmental pressures, natural resources, agricultural activities and home based businesses.

C. Land Use Regulation

Historically, the citizens of Tunbridge have generally taken a "no regulation" stance when zoning has been considered. However, during the 2005 community forum, some residents acknowledged a growing need to discuss the idea of land use regulations.

Towns without land use regulations are always at risk when a large-scale development is proposed. Because of this, State regulators have designated all towns without land use regulation as "1 Acre Towns" for the purposes of review under Act 250. This designation means the following:

- Any commercial or industrial developments of over one acre of property shall trigger a review under Act 250.

- The subdivision of land into six or more lots within a continuous period of five years shall trigger review under Act 250.

Under Criterion 10 of Act 250, any proposed project must conform to all duly adopted local and regional plans. It seeks to ensure that new development respects the wishes of Vermont citizens about the future of their town and region.

The Environmental Board has often found it difficult to interpret town plans in a regulatory proceeding because of their inherently vague and non-specific language. Town plans are generally considered visionary documents, and though not intended to be the word of law, will be used by the Environmental Board for direction if zoning laws do not exist. Considering that Tunbridge does not have land use regulations at this time, the town must specify the standards it expects a developer to meet if it wants the Town Plan to have controlling weight under Act 250. We have chosen strong language to ensure that the Town Plan gives a clear message to an environmental board if the need arises.

Goals

1. Continue conversation about the pros and cons of land use regulation (i.e. ordnances or zoning).

2. Recognize that each property is not isolated from others and to encourage responsible development and resource management within the community.

3. Strengthen town plan with direct and clear language in order that the Vermont Environmental Board has a clear understanding of the towns desires in the event of an Act 250 hearing.

D. Future Land Use

During the Community Meetings in April of 2005, much of the discussion focused on land use and land use related issues. It was clear that feelings in Tunbridge are mixed. Some residents support land use regulations and some do not. However, all agreed that they would like to maintain the present-day aesthetics of Tunbridge. Residents confirmed that they want to maintain the existing working landscape, and in order to do so, agriculture must be supported and encouraged. Working land is less likely to be fragmented. Such fragmentation would undermine the rural character of Tunbridge.

This document recognizes that not all land is equally suited for all types and intensities of development and that certain areas of Tunbridge have unique characteristics that must be protected. It is the basic premise of this Plan that future land uses be sensitive to both the physical limitations of a site and to the overall rural character of the Town. Accordingly, separate geographical areas have been defined in this section and the physical boundaries of each are defined (for planning purposes, only) on a proposed Land Use Map. For each area below (Village Center Areas, Route 110 Corridor Area, Flood Hazard Area and Residential/Agriculture Area) the purpose is stated and policies are offered in terms of the compatible types of development, intensity of use, and the conservation of natural resources.

While existing use of land and structures may not be entirely consistent with these proposals, it is the goal of this Plan that all future land development be in conformance with these policies.

E. Village Center Areas

Tunbridge's Village Center Areas cover the densely developed Tunbridge Village and North Tunbridge Village.

These centers are intended to continue to be the center of public activity; offer community services, appropriate retail and commercial opportunities; and preserve the historical nature of the villages.

In the Utilities and Facilities section of this plan, it was noted that the Town of Tunbridge has had great difficulty finding a reliable water source for their buildings in the Village. Clearly, there are limited water resources in Tunbridge Village, and as such any new development or improvements that would require a new water system or upgraded capacity would need to prove that such activity would not negatively impact the existing water resources.

Goal

1. It is a goal of the town to maintain viable village centers through good planning and subsequent development.

Policies

1. The density of development in this area should reflect existing settlement patterns, land capability, and the availability of utilities for expansion.

2. Shops, services, professional offices and public facilities should be developed at a scale and design appropriate to existing characteristics.

3. Rehabilitation and renovation of structures and older buildings of historic merit is encouraged to enable new and more economical uses of property and to avoid obsolescence.

4. Where new development is being planned, efforts should be directed to ensure that such development is complementary and compatible to the configuration of existing buildings and streetscape. Development should respect traditional scales, proportions, and shapes of the surrounding village.

5. Major public investments, such as improvements to Route 110, should be encouraged and endorsed only on finding that they will not unreasonably or unnecessarily jeopardize or endanger the character of the Village Centers. Prior to the commencement of plans, state planners should consult with the Town and affected property owners regarding these types of activities.

6. The Plan supports pedestrian enhancements that will promote walkability and safety.

7. Encourage including using a cooperative approach to drinking and wastewater systems when possible.

F. Route 110 Corridor Area

Vermont Route 110 parallels the First Branch of the White River along the valley floor, running north-south through Town. This valley floor was cited as an important visual element of Tunbridge's rural character during the 2005 public meetings. There is little commercial development along this road, with the obvious exception of what lies within the Village Center Areas. Any development that occurs in this highly visible area should be designed so as to minimize the impact on the rural character of this area. (See Map 7 – Proposed Vermont Route3 110 Corridor)

Due to the constant ebb and flow of the First Branch of the White River, the Route 110 valley floor has the most concentrated amount of prime agricultural soils in Tunbridge. Prime Ag land is defined by the National Soil Conservation Service as land that is well suited for the production of food, feed, forage, fiber, and oilseed crops, with the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when properly treated and managed. This definition, although one dimensional (focused only on growth of products and not taking into account aesthetic values), does point out the value these soils represent to farmers. Therefore, any development in this area must carefully consider the potential negative impacts on Prime Ag soils, and attempt to mitigate them.

The First Branch is also a center for recreational opportunities in Tunbridge. Access to the river allows for swimming, fishing, canoeing, kayaking and other activities. Plus, it is a thriving riparian ecosystem that would likely be upset if development were allowed to occur in this valley uncontrolled.

This area is to remain largely open and scenic and retain the recreational, agricultural and ecological value of the land. Large-scale developments, such as condominiums and industrial developments are inappropriate in this area.

Goals

1. It is the goal of the Town to maintain the distinct scenic value of the Route 110 corridor through low impact development and sensible planning.

2. It is the goal of the Town to protect the availability of Prime Agricultural Farmland in the Route 110 corridor.

Policies

1. The density of development in this area should reflect existing settlement patterns, which are diffuse.

2. If more than one building is to be included in a development, the buildings should be clustered to avoid impact on the rural character of the Route 110 Corridor.

3. Buildings and roads should be located at the edges of woodlands and fields, along hedgerows, etc., in an effort to preserve tillable units, whether or not in the same ownership.

4. Commercial development in this area should be limited to low-impact light industry, and agricultural businesses that are located in clusters and set back from the highway.

5. Land use activities which potentially threaten groundwater quality should be carefully reviewed and monitored to prevent undue loss of quality to groundwater.

6. Development on prime agricultural soils is discouraged.

G. Flood Hazard Area

The Flood Hazard area follows the First Branch of the White River north-south. For more information on Flood Hazard Areas, see the Natural Resources chapter of this Plan.

Floodplains are often excellent agricultural land due to the thick layers of river-borne soil deposited there. Floodplains also provide natural storage of floodwaters resulting from snowmelt or severe or prolonged rainstorms. Floodplains are poorly suited for structural development. It is prudent Town policy from a public safety standpoint to discourage structural development and substantial investment in floodplain areas.

Goals

1. Agricultural use is encouraged on the high-quality soils of the floodplain.

2. Recognizing and maintaining the flood plain functions of the valley particularly sediment storage and nutrient retention.

Policy

1. New development within the limits of the 100-year floodplain is discouraged. Improvements to existing structures in the floodplain are acceptable, provided that careful planning is done to insure against unnecessary loss of property or public endangerment.

H. Residential/Agriculture Area

This area encompasses all areas in Tunbridge not designated in sections D, E, F and G of this chapter. Its primary purpose is to protect the working landscape while allowing for a reasonable mix of low-impact uses.

The Residential/Agriculture Area is a mix of residential and agricultural development. Uses in this area include farming, forestry, supporting retail and service providers, residential development, home occupations, recreation, agriculture- and cottage industries. Residents in this area should expect to encounter the sights, sounds, smells and activities typically associated with a working landscape. Commercial and industrial uses, however, should be conditional, if allowed, to preserve the rural character of the area. Large-scale commerce would be inappropriate. Likewise, "right-to-farm" ordinances, and other measures designed to protect and encourage agricultural uses should be included in any future land use ordinances. Larger industrial and retail uses would not be anticipated in this area.

Goals

1. It is a goal of the Town to encourage agriculture of all varieties throughout Tunbridge.

2. It is a goal of the town to support new agricultural developments provided that they continue to maintain the rural character of the Town.

Policies

1. Maintenance of a working landscape is the primary goal for the Residential/Agricultural Area. Projects which adversely affect the rural setting and conflict with the existing working landscape should not be located in this area.

2. Agricultural and residential uses are to be the primary and dominant land uses in the Residential/Agricultural Area. Commercial or industrial projects in this area should be designed so as to not adversely affect the rural character of this area.

I. Telecommunications Facilities

Telecommunications have become increasingly important to the security and economic needs of the residents and businesses of Tunbridge; this trend will continue. It will play a key role in the Town's economic future, creating new opportunities for relocation and decentralized business operations.

The field of telecommunications is undergoing rapid change, with advancements in this field, such as with transmission towers, continuing to impact growth in the Upper Valley. As a use of land, these towers have raised planning concerns. Most facilities (towers and antennae) are located on hilltops or high elevation areas for optimum transmission signals. Thus, due to their higher visibility from multiple vantage points, conflicts with scenic landscapes have become an issue.

Under Vermont lawn [24 V.S.A., Chapter 117] municipalities are empowered to regulate wireless telecommunications facilities. In addition, Vermont's Act 250 statutes require permits for facilities extending 20 feet in height. Prior to granting approval for a project under Act 250, the telecommunications facility needs to be determined to be in conformance with the Town Plan. Accordingly, it is appropriate to include in this section goals and recommendations relative to communications towers that can serve as a standard of review on the potential impacts to Tunbridge.

Goals

1. Provide standards and requirements for the operation, siting, design, appearance, construction, modification, and removal of telecommunications facilities through the creation of a telecommunications tower ordinance.

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

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.

Recommendations

1. Create a telecommunications tower ordinance with the help of the Two Rivers-Ottauquechee Regional Commission.

2. When feasible, locate telecommunication equipment in existing structures such as silos and steeples.

J. Wind Generation Facilities

New technologies are now available to harness wind power that are highly efficient, making it a viable alternative to more traditional sources of power. While there are benefits in capturing renewable energy, the location and design of wind generators can adversely interfere with scenic and historic resources. In Vermont, ridgelines are the favored sites for large-scale commercial generators due to prevailing wind patterns and topography. Locations between 2,000 and 3,500 feet in elevation are considered ideal for "on the grid" generation. For Tunbridge, this means that there are unlikely to be any sites that are available for commercial generation.

In spite of this, wind energy offers possibilities for on-site generation of electricity for home consumer use. Generally, these are considered accessory uses or structures, subordinate to primary uses such as residences or farms. On-site/off-grid generation facilities are not subject to state permitting as is the case for commercial generators that are required to obtain approval from the Vermont Public Service Board [24 V.S.A. Section 248]. Local planning and land use regulation should consider the potential impacts associated with small-scale, private-use wind towers and provide guidelines for the development of these facilities in Tunbridge. Wind tower generators need to be high to capture the wind raising issues of visual impact. Other considerations include noises emitted from the generator and possible effects on birds and other wildlife. (See Appendix B, Energy)

Goals

1. Encourage planning and design of highly visible projects to incorporate sensitivity to the site..

2. Accommodate appropriate scale wind generation as part of a broad based, decentralized energy approach.

K. Act 250 Requirements

All projects requiring an Act 250 permit shall conform to the following Guidelines. Conformance with these Guidelines is required for being in conformance with the Tunbridge Town Plan under Criterion 10 of Act 250. These Guidelines are in the nature of recommendations for all other projects.

Lot Layout – All Uses

- Avoid monotonous lot layout of equally sized and shaped lots, especially along a road frontage. Subdivision into a series of 10-acre lots with similar proportions is specifically prohibited.

- The amount of frontage and building position will be varied from lot to lot to avoid a suburban pattern of repeated houses or other buildings situated at or near the middle of adjacent lots one after another.

- Creating more than one adjacent lot with a depth greater than four times its frontage ("spaghetti lots") is prohibited.

- Buildings shall be located at the edges of woodlands and fields, relatively close to roads, along hedgerows, etc., in an effort to preserve tillable units, whether or not in the same ownership.

- Lay out lots to take advantage of and preserve desirable features, such as stone walls, hedgerows, fields, natural clearings, and land contours.

- Locating buildings at the top of ridgelines or at the brows of hills where land is open and sites would be highly visible from nearby public roads is prohibited.

- Excavation for roads or buildings where excessive erosion will be likely is prohibited.

- Locate buildings and other construction such that they will not detract from natural or scenic features, such as bodies of water or historic resources.

- In the case of multiple unit projects, buildings shall be clustered.

- On developments involving adjacent buildings or lots, driveways must be shared.

- Locate light industrial and commercial uses where they will not be prominently visible, or screen such uses to minimize detrimental impacts on neighboring uses.

- Locate any noisy, toxic, or noxious uses where they will not be detected from public roads or neighboring uses, (especially housing), and/or take all reasonable means to screen or lessen any detrimental impacts of such uses. This provision does not apply to agricultural uses.

Construction in Tunbridge Village Historic District or North Tunbridge

- Construct buildings that are of the size and scale of other buildings in the Village Area.
- Use traditional building massing, forms and materials within these two settled areas.
- Where alteration of "contributing structures" (structures that are deemed architecturally or culturally significant to a historic district) within the Village Historic District is contemplated, such alterations shall maintain the original character.
- Within settled areas, home businesses are deemed to be a use compatible with existing uses.
- Any development within the Village Districts may have an impact on the existing water supply due to the limited space. Developers must prove that their development will not have any negative effects on public or private water supplies within this area.

Commercial Development Along Route 110

- Development shall be located in clusters set back from the highway.
- Existing buildings or parts thereof shall be reused for commercial development.
- Do not locate large parking or delivery areas in front of commercial buildings. Large parking areas shall be located at the sides or rear of such buildings. Where feasible, share parking areas between adjacent uses.
- Large commercial signs (4' by 4' or greater in dimensions) especially if illuminated, are prohibited.
- Maintain trees and existing vegetation adjacent to Route 110. A generously landscaped buffer (using native plants and trees) shall be part of any new construction adjacent to Route 110.
- Share all curb cuts to Route 110. Minimize paved or impermeable areas.

Only put off until tomorrow what you are willing to die having left undone. -Pablo Picasso

XIII. Natural Resources

A. Wetlands

Background

Wetlands are ecologically fragile areas and how these lands are managed have 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 Tunbridge, 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 6, 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.

In those towns 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 Tunbridge may result in additional areas being determined as significant or important for conservation.

Goal

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

Policies

1. Structural development or intensive land uses shall not be located in significant wetlands or within buffer zones to significant wetlands.

2. Developments adjacent to wetlands should be planned so as not to result in undue disturbance to wetland areas or their function. Mitigating measures to protect the function of a wetland are an acceptable measure.

Recommendation

1. The town may want to consider conducting an inventory of wetlands to determine where, if any, wetlands that have not been mapped by the State of Vermont are located.

B. Flood Hazard Areas and Floodplains

Background

There is a general scientific consensus that our climate is experiencing a warming trend that has been induced by human activity. According to the U.S. Global Change Research Program, changes in climate extremes may not result in more rain overall, but in an increase of extreme weather events. Flood frequency and amplitude may increase in some regions while other areas may experience draught.

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, 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.

Vermont has experienced thirteen 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. In some cases, recovery costs to the public sector 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 (See Map 2 – Current Land Use, Flood Plain "FEMA FIRM") for the Town of Tunbridge, 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 (on the official flood hazard maps as well as the Future Land Use Map of this plan) and at the Regional Commission. The topography of Tunbridge is such that there are few areas low enough to be in the FEMA Flood Hazard Area. The designated area runs through Tunbridge along the Route 110 valley. If in doubt when developing, contact the Tunbridge Planning Commission or the Town Office.

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.

The Town of Tunbridge adopted a Flood Hazard Bylaw in 1986, and is recognized as a participating community in the National Flood Insurance Program. Coverage is only available to landowners in town if a town elects to participate in the program.

Two Rivers-Ottauquechee Regional Commission has determined that approximately twenty-one buildings in Tunbridge are presently located within the mapped flood hazard areas. Mortgage lending institutions require as a prerequisite to financing that flood insurance be purchased on property subject to flooding.

C. Flooding and Land Use

Floodplains, as with wetlands, are fragile areas which are part of the land and water interface between lakes, ponds, rivers and streams. How these lands are managed has a direct bearing on the quality and quantity of water resources, as well as the safety of the town. Flood hazards can be exacerbated by poor development practices, specifically this includes allowing development in the floodplain without accounting for "no net fill", channelizing or straightening river segments and eliminating buffer areas next to rivers and streams.

The potential for flooding can be reduced by adopting the following policies:

1. Structural development or intensive land uses are discouraged from locating in Class I and Class II wetlands. (See Map 6 – Natural Resources.)

2. Developments, and their associated stormwater discharges, that are adjacent to wetlands should be planned so they do not cause undue disturbance to wetland areas. Maintenance of naturally vegetated buffer strip between a wetland and the project site is encouraged to prevent ground water pollution and direct discharges into a wetland.

3. Structural development and placement of fill within the limits of the 100-year floodplain is discouraged. Where careful planning at the local level accepts development within the floodplain, the development should be designed to achieve no-net-fill, and located so they do

not impede the floodwaters and endanger the health, safety, and welfare of the public. No structural development, except bridges, should be located within the limits of a floodway.

4. Natural areas, non-structural outdoor recreational and agricultural uses are the preferred land uses within floodplains. Commercial, industrial, and residential uses are discouraged, except as noted above.

5. Development outside of existing or planned settlement areas should not be located immediately adjacent to watercourses, lakes, ponds or shorelines. Such areas should principally be maintained in a natural vegetative state for environmental and aesthetic purposes.

6. Public and community water supply watersheds should be protected by limiting development to low densities and by encouraging forest and agricultural best management practices including high standards for erosion control and measures to minimize runoff.

Goals

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

2. To ensure no net loss of flood storage capacity in an effort to minimize 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 maintain maps that reflect as accurately as possible the flood hazard areas to assist in appropriate land use decisions.

4. To recognize that upland areas adjacent to unstable rivers and to steep streams may be at risk of erosion during floods.

Policies

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

2. Any land use activity (filling, or removal of earth or rock) within flood hazard areas which would result in net loss of flood storage or increased or diverted flood levels or increased risk to adjacent areas shall be prohibited.

3. 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 are relatively protected from flooding damage.

4. Flood hazard regulations shall be extended to areas identified as at risk to flood erosion.

D. Water Resources

Background

Water resources include aquifers (groundwater) and surface waters. Sustainable yields of quality water are necessary for the lives and livelihood of citizens of Tunbridge.

The continued availability of clean, high-quality drinking water is a concern for all Vermonters. Because of this, in 2006 the Groundwater Management Act was passed by the Vermont Legislature and signed into law by Governor Jim Douglas. This Act [10 V.S.A. chapter 48 (5)] is designed to help define the groundwater system, enable greater scrutiny of commercial water extraction operations and provide for the study and mapping of groundwater resources throughout the State. Hopefully, this legislation will bring Vermont "up to speed" with neighboring states regarding groundwater protection and mapping. Tunbridge has no mapped groundwater information.

The process for mapping groundwater is complicated. It involves multiple scientific methods including using technology to create a detailed picture of groundwater situations and use patterns, analysis of well data provided to the state by well drillers and site specific analysis. Unfortunately, there is no easy method.

The Vermont Agency of Natural Resources, in cooperation with federal and other state agencies, has evaluated aquifer recharge areas serving systems involving 10 or more connections or 25 or more people. These recharge areas are acknowledged and are recognized as important for protection. Land developments that are potential threats to water quality and significant aquifers are discouraged from locating in these areas. The area surrounding the Tunbridge Central School well has been designated a Source Protection Area by the State of Vermont.

As it has been noted in other chapters, the Town has discovered that there are some serious limitations to the availability of groundwater in Tunbridge Village. Because an increase in the number of wells in the Village could strain an already limited system, any future development in Tunbridge Village that requires a new well or septic system to be created shall be carefully reviewed. Because of these issues, the town of Tunbridge is particularly concerned with criteria 1, 2 and 3 of the Act 250 process. [See 10 V.S.A. Section 6086 (A)(1)(2)(3).]

Goals

1. To maintain or enhance the quality and quantity of drinking-quality 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.

3. To consider surface water and groundwater impacts and effects related to proposed or existing uses of land.

4. To maintain or improve surface water quality and quantity.

Policies

1. No new development or improvements in Tunbridge Village that require a new well or septic system shall be allowed unless the builder can prove that there will not be a significant impact on the availability and quality of already limited resources.

2. Land use activities which potentially threaten groundwater quality should be carefully reviewed and monitored to prevent undue loss of groundwater quality.

3. Maintenance or enhancement of water resources for recreation, fisheries, necessary wildlife habitats and quality aesthetics are high priorities. Water resource policy and practices should protect these uses.

4. The location, sizing and density of on-site sewage disposal facilities should be determined by the capacity of the soil, the natural limitations of the site, and underlying substrata conditions, such as depth to bedrock and seasonal high water tables. For the most current information regarding permitting, see http://www.anr.state.vt.us/dec/ww/rules.htm.

5. Preservation of the natural state of streams should be encouraged by,
    - Protection of adjacent wetlands and natural areas;
    - Protection of natural scenic qualities; and
    - Maintenance of existing stream bank and buffer vegetation including trees, together with wildlife habitat.

Recommendations

1. Continue to support the White River Partnership water quality monitoring and watershed planning efforts for the First Branch.

2. Investigate maintaining and improving public access to the river for recreational use.

3. Conduct a mapping study of groundwater resources in Tunbridge.

E. Wildlife Resources

Background

Wildlife is one of the popular attractions to the area and provides some citizens of Tunbridge with direct and indirect livelihoods from sports, tourism and direct harvest of wildlife. Additionally, the interconnection of wildlife with their environment has an impact on the natural environment.

Wildlife management requires management of human activities around animals as much as management of animals around human activities. Managing for specific species is not as desirable as managing for the entire ecosystem supporting the species.

Tunbridge's fields, forests, wetlands and streams are home to a diverse and healthy wildlife population that includes bear, bobcat, moose, deer, otter, geese, ducks and mink, to name only a few. Nearly all open space provides habitat for game and non-game species. There are, however, some areas in Tunbridge which provide critical habitat that should remain intact. These areas include wetlands, deer wintering areas, bear mast stands, and edge (the transition zone between two cover types, such as field and forest). Development or logging in or adjacent to these areas should consider wildlife implications during the planning process.

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.

Most important when considering development and its impact on wildlife is the concept of habitat fragmentation. Albert Todd, the Environmental Protection Agency liaison, in the February 1999 issue of Journal of Forestry, summed up the impact of forest fragmentation: "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.

Some studies focusing on wildlife fragmentation have been conducted in Vermont, but only on a limited basis. At some point, it may be wise for Tunbridge to attempt to study this important element of wildlife preservation.

Goals

1. To maintain or enhance the natural diversity and population of wildlife, including natural predators, in proper balance.

2. To restore stable populations of endangered or threatened wildlife in appropriate habitat areas.

3. To maintain or improve the natural diversity, population, and migratory routes of fish.

4. To allow sport and subsistence hunting of ecologically sound intensities to provide continued success of the species.

Policies

1. Wildlife populations and natural diversity should be maintained or enhanced.

2. Long-term protection of major habitats through conservation easements, land purchases, leases and other incentives is encouraged.

3. It is the policy of the Town to protect deer wintering areas from developments and other uses that adversely impact the resources.

4. Development other than isolated houses and camps shall be designed so as to preserve continuous areas of wildlife habitat. Fragmentation of wildlife habitat is discouraged. Effort shall be made to maintain connecting links between such areas.

5. Preference shall be given to development that utilizes existing roads and field lines.

Recommendations

1. Encourage owners of necessary habitat for threatened species (see Appendix B, Vermont Fish & Wildlife Department, for listing of current threatened and endangered species of plants and animals) to contact the State for assistance in developing a management plan for these sites.

2. Identify wildlife corridors in Tunbridge.

F. Mineral Resources

Background

The use and management of Tunbridge'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 Tunbridge 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.

Policies

1. 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 any adverse effects on water quality, fish and wildlife habitats, viewsheds and adjacent land uses; and
    - To reclaim and re-vegetate sites following extraction.
    - To minimize noise impacts on adjacent uses including residential areas.

G. Plant Communities

In Tunbridge, 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, plant 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. Good management practices, such as requiring developers to locate their projects in less sensitive areas, maintain buffer areas and protect against silt runoff from excavating, are a few of the ways that these communities can be maintained.

Invasive species are a growing problem in Vermont. Invasive species are defined as those species which spread from human settings (gardens, agricultural areas, etc.) into the wild. Once in the wild,

invasive species may continue to reproduce and displace native species, causing biodiversity to suffer and throwing entire ecosystems out of alignment. Both Federal and State governments have guidelines in place for handling invasive species, and there are resources available to interested parties through the University of Vermont. While the list of invasive species in Vermont is extensive, the most common invasive plants in Tunbridge seem to be Wild Chervil and Wild Parsnip. See Appendix B for additional sources of information on natural resources.

Goal

1. Minimize the spread of invasive plant species in Tunbridge.

Recommendations

1. Research what other communities in Vermont and elsewhere have done to minimize the spread of invasive plant species.

2. Advise road crews to take care when ditch cleaning to minimize the spread of invasive species such as Japanese Knotweed, Wild Chervil, Wild Parsnip and Purple Loosestrife

3. Whenever possible, have the road crew mow roadsides before invasive species go to seed. (need to research approximate calendar dates for most effective mowing)

4. Educate landowners as to what invasive plant species look like and how to control their spread, possibly through the printing of a basic document.

For every complex and difficult problem, there is an answer that is simple, easy, and wrong.

-H. L. Mencken

XIV. Energy

A. Background

As this Plan is being written, the United States has experienced the highest oil prices in national history. Concerns about the sustainability of our nation's dependence on oil produced in foreign countries have 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 more burdensome for the average Tunbridge 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 Tunbridge plans for future growth can have an impact on energy. 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 needs 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 available. Oil producers have created websites specifically to engage in a public discussion about how the nation will handle the decline in oil production in the future.

Given the predictions of Peak Oil, Tunbridge, like the rest of the world, should prepare for a very different future. Principles of energy, energy conservation, stewardship and energy independence, as well as global climate change, underscore the need for good planning and active discussion about energy alternatives.

B. Energy Demands

Vermont currently gets about one third of its energy from the nuclear power generated at the Vermont Yankee plant in Vernon, VT. Another third of the power used in Vermont comes from Hydro-Quebec, a large-scale hydro-power facility in Canada. Contracts with both facilities are scheduled to expire in 2012. About 7-10% of state power comes from renewable generating plants, with the remaining energy being provided by traditional coal fired plants. Statewide energy consumption has been increasing progressively over the past decade. According to "Fueling Vermont's Future: Vermont Comprehensive Energy Plan and Vermont Greenhouse Gas Action Plan", a 1998 report by the Department of Public Service, the increase has been attributed to low oil prices, economic growth, and rising transportation energy use due to increasing miles traveled and the absence of gains in the average fuel efficiency of the vehicle fleet.

According to the 2000 U.S. Census, the major heating fuels consumed in Tunbridge are oil (45%), wood (31%), LPG and gas (22%) and electric (less than 1%). Per capita energy consumption for residential and transportation purposes is about the same as in the northeast. About 76% of all energy used is for these purposes. Almost 80% of residential energy is dedicated to space heating and domestic hot water. State energy officials estimate that simple conservation measures incorporated in new housing could result in a 20% to 30% reduction of energy usage statewide.

According to the 2000 U.S. Census, more than 85% of Tunbridge residents drive to work. Transportation represents the largest single use of energy in Vermont. Because public transportation in Tunbridge is nearly non-existent, there are few alternatives, if any, to the automobile if a resident needs to work outside of town.

Vermont, on the whole, is a very energy dependent state. With the noted exceptions of our more urban towns and few cities, most towns in Vermont are similar to Tunbridge in that residents must travel by car for jobs, goods and services. Considering the likelihood of a changing energy landscape in the future, it would be wise for Tunbridge to consider changes in where we purchase goods and services, including alternative methods of generating and using energy.

The reader of this Plan might ask: "What can one small town do to change our energy needs?" Of course, there is no simple answer. There are small steps that can be taken by Tunbridge and its residents to change the way energy is consumed both individually and collectively. Conservation remains one of the most effective and immediate strategies for reducing energy demand. (See Appendix B, Energy) for resources regarding specific conservation measures) The following strategies however are essential components in planning for a sustainable energy future.

C. Decentralized Energy

Since the Rural Electrification Act was signed in 1936, our nation has moved toward a centralized system to provide all but the most rural locations with electricity. On a simplified level, energy is produced at a generation plant and sent through transmission lines via a nationwide "grid". Energy from the grid is routed to transformer stations and then delivered to consumers.

In the past our energy production was decentralized, there with many small, local energy producers. It was not uncommon for individual towns to have their own source of energy – usually through hydro power. In Tunbridge, for example, residents recount that there were at least six different dams on the First Branch of the White River used to produce power or run machinery. As energy distribution became more industrialized, these small companies were replaced by larger regional power companies. Presently, Tunbridge is served by two electricity providers, Central Vermont Public Service (CVPS) and Washington Electric, Co.

While this model may be acceptable in times where there is plenty of energy, the possibility of a worldwide fuel shortage casts a shadow of doubt on it. For Tunbridge, it may be worth considering the concept of *decentralized* energy production.

The ultimate goal of decentralized energy production is to have every household or cluster of households producing its own energy using free and renewable resources. While this might be unrealistic in the near future, technological advances keep moving forward and make the likelihood of cost-effective home energy generation a distinct possibility.

There are a number of small-scale power generation options that could be considered and with planning and the support of town government could be implemented, for example, use of the First Branch of the White River for power generation. A small hydro turbine placed in a logical location might be able to produce at least enough energy to provide power to the Village. There may be locations in town suitable for wind generation facilities. Clearly, the impacts and costs of these concepts will have to be given much thought, but nevertheless, they are worth considering.

In the near future it is most likely that it will be up to the individual to take steps to provide their own energy production. Homeowners can already make their homes completely energy independent by creating energy efficient homes and using renewable energy to generate power.

Significant ways to reduce energy use in the home are,

- Insulate homes with modern insulations and technologies
- Use high efficiency windows
- Install energy efficient appliances like refrigerators, freezers, front loading washing machines, gas heated clothes driers and heating systems without blowers.
- Use high efficiency compact fluorescent lighting
- Use gas and/or solar hot water heaters
- Site home to encourage solar gain, wind blocks and natural cooling patterns.

D. Renewable Energy

For the individual or small group of homeowners, the key to the decentralized model of energy generation will be renewable energy. The term "renewable energy" refers to electricity supplied by 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 Power -** Solar power is a viable source of energy for home heating and hot water in Vermont. It can be captured in several ways, passively with siting of the house and construction, and through the use of solar panels, or photovoltaics.

  Passive solar techniques make use of the steady supply of solar energy by using building designs that carefully balance their energy requirements with the building's site and window orientation. The term "passive" indicates that no additional mechanical equipment is used, other than the normal building elements. Solar gains are brought in through windows and captured.

  Generating power with solar panels works well in Vermont, provided that panels can be located facing south with a good view of the sun. It is generally considered reliable, and after the initial investment of installation, it will save the user money. Solar technologies can be used for both generating electricity and heating water.

- **Wind Power –** Power generated from wind is done through a wind turbine, which is installed on top of a tall tower, collects wind energy and converts it 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.

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.

- **Biomass -** Biomass is generally used for heating and generating of energy. Typically, wood chips are burned to create heat and to produce steam which operates a generator to create electricity. Wood is an abundant renewable energy resource in Vermont, and virtually all of Vermont's wood chips comes from mill wastes or sustainably harvested chips from low-quality trees. Biomass is not limited to wood chips, but can include hardwood and other plant material.
  The 2000 Census reports that 44% of Tunbridge's households use wood as a fuel source for heating. The Vermont Department of Public Service estimates that the average household burns between 3 and 4 cords of wood each year during the heating season. Given that the total number of homes in Tunbridge heating with wood was 83, it is estimated that between 249 and 332 cords of wood were burned in 2000.

- **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 impact of 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 is often used in colder weather. It can be used in compression-ignition (diesel) engines or oil-fired boilers or furnaces with little or no modifications. As of this writing, the town is considering using Biodiesel in the town highway and fire department vehicles.
  Growing biomass to use in biofuels may be a viable way to encourage farming in Tunbridge as well; however, balance should be sought between growing for energy demands and for consumption.

- **Micro Hydropower** – Many locations in Vermont, including Tunbridge, 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.

  While large hydro facilities are more common, advances in technology are making it far more viable for an individual homeowner to utilize the energy created by moving water. Micro hydropower has the potential to generate enough electricity to power a home, provided that the essential ingredients – water and vertical drop – are available. Hydro can be an excellent compliment to a solar system, because water flow is often greater during the winter season when solar is less effective.

- **Cow Power (Biogas)** Another alternative energy source that is emerging in Vermont is "Cow Power". This system capitalizes on Vermont's farming industry by utilizing "biogas" (methane) that is created using cow manure.

An anaerobic digester is built on a farm where the manure is collected. The digester holds the farm waste at roughly 100 degrees for more than 20 days. In the process gas is produced by the bacteria in the digester, which is delivered to a modified natural gas engine. The gas is then burned to generate electricity. "Cow Power" is a logical source of power for small scale farms similar to those in Tunbridge. There are a few farms in Vermont that utilize "Cow Power" to offset their power costs.

One of the key advantages to this system is the reduction of methane released into the environment. Methane is approximately 20 times more potent as a greenhouse gas than carbon dioxide.

E. Goals, Policies and Recommendations

Goals

1. To encourage a pattern of settlement and land use that uses energy efficiently.
2. To promote the design, siting and construction of buildings and structures that are energy efficient and minimize the need for costly sources of energy. See Appendix B for additional information on energy efficient building.
3. To encourage the development of local renewable energy sources and to reduce dependence on outside energy sources.

Policies

1. Major public investments, such as schools, public recreational areas, and municipal facilities need to be situated within or in close proximity to the villages of Tunbridge.
2. The rehabilitation or the development of new buildings and equipment should use proven design principles and practices with the lowest life cycle costs (cost of owning, operating, maintaining, and disposing of a building or a building system over a period of time):
    a. Where land development or subdivisions are proposed, design plans shall reflect sound energy conservation principles, such as solar and slope orientation and protective wind barriers. An example would be the cluster planning concept, which is an approach that encourages energy conservation and efficiency; and
    b. Visual effects of electrical generation, transmission, and distribution facilities shall be minimized whenever feasible.
3. Generation, transmission, and distribution facilities or service areas shall be encouraged only when they complement the recommended land use patterns set forth in this plan.
4. To reduce commuting, the development of broadband services, energy efficient home occupations and small-scale home business is encouraged.
5. To promote energy efficient commuting, the community supports state and regional transportation programs serving Tunbridge.

Recommendations

1. The Town should work to increase public awareness and use of energy conservation practices through educational efforts and consider alternative energy sources in public facilities.
2. The Town should explore the potential for a commuter shuttle and appropriate parking.

The only people, scientific or other, who never make mistakes, are those who do nothing.
-Thomas Huxley

XV. RELATIONSHIP TO OTHER PLANS

Tunbridge is bounded by Chelsea, Randolph, Royalton and Strafford. All of these towns have planning programs and planning commissions. All of these towns have plans in effect: Chelsea in 2002, Randolph 2004, Strafford 2003, and Royalton in 2002.

These towns have land use regulations as follows:

- Chelsea has zoning bylaws with districts, including a historic design and review overlay district in the Village Area. These bylaws were revised in 2007.

- Randolph has had subdivision and zoning bylaws with districts since the 1960's. Their Town Plan was completely revised and adopted in 2004. They are currently working on a complete revision of their zoning bylaws.

- Royalton does not have land use regulation, but is currently trying to determine support for such an ordinance. Their Town Plan was adopted in 2002.

- Strafford has had multi-district zoning bylaws for at least 15 years, and was one of the first towns in the area to have zoning. Strafford also has a subdivision bylaw. They are currently revising their zoning bylaws.

Tunbridge shares numerous activities and services with surrounding towns, including school services, rescue squad and fire protection. The town is also a member of the Two Rivers-Ottauquechee Regional Commission (TRORC).

TRORC's regional plan covers 30 towns including Tunbridge. Since the preparation of the Tunbridge Town Plan was done with the assistance of the Regional Commission, no conflicts between the two have arisen. In fact, the two plans have similar policy statements regarding the need for development that does not overburden services. In addition, no specific development goals in this Plan conflict with any regional goals.

The neighboring plans have been read in the context of the proposed Tunbridge Town Plan. Once again, no conflicts exist in either general philosophy or specific development proposals along town borders.

Recommendations:

1. To encourage continued communication and cooperation between Tunbridge 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.

XVI. Implementation

A. Putting the Plan Into Action

The character of Tunbridge, its people, and landscape has been created over the years through the individual and collective decisions of its citizens and public officials. The efficiency, attractiveness, and well-being of the community is determined, in part, by the ability of the Town to plan for its needs and to find a mechanism to put planning goals into action.

Previous elements of this Plan have been centered on existing conditions, probable trends and policy development which, when combined, represent a vision for the kind of town Tunbridge desires for the future. One thing is certain – the community will change. The opportunity is that citizens and town officials together can direct this change consistent with their desires, using a variety of mechanisms.

The following sections describe the tools and techniques that could be used to implement the Tunbridge Town Plan.

B. Adoption of the Plan

Adoption of the Tunbridge Town Plan by the Selectboard, in accordance with the procedures outlined in the Vermont Planning and Development Act [24 V.S.A., Chapter 117], is the first step in putting this Plan into action. Through its adoption, the town accepts the principles and policies as set forth in this Plan as in the public interest and as a guide for the future growth and development decisions affecting Tunbridge.

C. Ongoing Planning

Planning for change is a continual process for Tunbridge and will require the involvement of the Planning Commission and the public to ensure that the goals and policies of the Plan are integrated into the decisions affecting land use, taxation, and public investments in Tunbridge.

The quality of a Town Plan is reflected in the amount of public involvement in its creation. Regular community meetings, held by the planning commission, that discuss important issues relevant to the Town plan will ensure that the document truly reflects the vision of the residents of Tunbridge.

The Tunbridge Town Plan is a dynamic document reflecting the community's visions and values. By statute [24 V.S.A., Section 4387] the plan must be revisited at least every five years to be kept relevant. The Planning Commission is responsible for the maintenance and amendment of the plan. Within the next five years following adoption of the plan, the Planning Commission will need to evaluate the plan in light of new conditions and needs. Re-adoption of an updated plan will require notice to the townspeople and action by the Selectboard.

At any time following adoption of the plan, the Selectboard may request the Regional Commission to approve the Plan or amendments to a plan. Before approving a plan, the Regional Commission shall find that the plan meets four basic tests [24 V.S.A., Section 4350(b)].

Approval of the plan provides an improved legal standing for Tunbridge to influence and integrate its planning policies with State agency planning affecting land use.

D. Implementation Tools

Vermont law enables Tunbridge to implement the adopted Tunbridge Town Plan through a variety of ways. Regulation of land use and development through rules adopted by the voters is one possible method. 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.

Zoning generally involves partitioning the town into 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. As an alternative to conventional methods, Tunbridge may 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 - Tunbridge does not currently have subdivision regulations. These regulations, if adopted, would be administered by the Planning Commission. Such 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.

Flood Hazard Bylaws - Under Vermont law [24 V.S.A., Section 4412], the Town of Tunbridge may regulate the use of land in a defined flood hazard area adjacent to streams and ponds. These bylaws can be 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 Tunbridge unless the Town has in effect a Flood Hazard Bylaw which, at present, Tunbridge has.

Sewage Ordinance - In addition to zoning, subdivision, and flood hazard bylaws, Tunbridge may, through its Selectboard, adopt an ordinance to regulate the design and installation of on-site sewage systems. Under this ordinance, prior to the installation or replacement of a system, the landowner would first need a permit from the Tunbridge Board of Health (Select Board and Town Health Officer). However, this ordinance may be redundant as the state will regulate all new septic installations. (See Appendix B, Natural Resources)

Highway Ordinances - Tunbridge 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, Tunbridge does have, through its Selectboard, the ability to regulate 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.

Capital Budget – 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 Tunbridge and the school district have an informal system of capital programming, it is recommended that a Capital Budget Committee be established to work with the Select Board and School Directors in the development of a list of capital needs and expenditures, and to formally present a Capital Budget and Program for adoption.

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.

Tunbridge 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. (PH: 802-828-3217).

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. (See http://www.nrb.state.vt.us/lup/statute.htm#ten Appendix B)

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 Tunbridge, 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 Tunbridge 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 Tunbridge and to offer testimony, as appropriate.

Coordination of Private Actions - Citizens and private enterprise have a vested interest in the well being of Tunbridge. 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 Tunbridge, 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 Tunbridge.

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.

E. Guidelines for Growth

The following guidelines are intended to help town officials, residents and developers work together to plan and design developments consistent with the goals and policies of this plan. These guidelines are suggested ways to implement the plan. They are not mandatory and are not intended to be strictly adhered to in every case. They are offered to give landowners and officials a common, but flexible framework for preparing plans and making decisions.

Siting New Development - New development should be sited to

1. Be compatible with the historic settlement pattern;

2. Maintain functional integrity of deer wintering yards and wildlife corridors;

3. Be cost efficient for municipal services; and

4. Conserve the agricultural potential of primary agricultural soils by
   - Keeping primary agricultural soils available for agricultural production unless the only economically viable use of the land would be from incompatible uses;
   - And utilizing creative planning and design to minimize the reduction of agricultural potential.

Designing New Development - Landowners should design and phase new development, particularly large residential development to

1. Avoid overloading public facilities and services;

2. Protect and promote the harmonious balance between buildings and useful, well-defined open space, and a human-scaled character of structures and settlements;

3. Be compatible with desired habitat condition and public outdoor recreation;

4. Take advantage of opportunities to enhance and/or restore habitats by establishing native vegetative diversity or provide other wildlife benefits;

5. Mitigate the effects of proposed actions on identified archeological sites;

6. Be compatible with the qualities that make historic areas, structures or sites significant;

7. Protect the community trail system from activities which would unduly compromise desired trail experiences and uses;

8. To promote the design, siting and construction of buildings and structures that are energy efficient and minimize the need for costly sources of energy. See Appendix B for additional information on energy efficient building; and

9. Incorporate the following visual elements:
   - Unobtrusive heights of buildings;
   - Vegetative screening;
   - Preservation of native vegetation;
   - Unobtrusive location of utilities; and
   - Minimal alterations to topography.

Public Facilities and Services - Major new developments should pay a proportionate fair share of the increased cost of providing public facilities or services to the development.

Roads - New roads, private or public, should be designed and constructed to

- Minimize impacts to large woodlands and wildlife corridors (if roads and trails are desired, locate them along the outer edge of the areas and limit trail use to low-impact activities compatible with the habitat objectives);
- Meet town road standards; and
- Minimize impacts on desired habitat conditions, water quality and other ecological functions.
-

Landowners requesting upgrades of Class 4 roads to Class 3 should pay the costs of the necessary improvements. [See 19 V.S.A., Section 711].

New private development of roads and ongoing plowing and maintenance, should remain the responsibility of the landowners.

If stream crossings are necessary for new development, efforts should be made to minimize their impacts on aquatic life.

Water and Sewer Systems - Prospective developers should demonstrate the ability to provide an adequate supply of potable water for their developments without impairing the quality or quantity of existing water supplies.

Developers should protect the quality and yield of groundwater by limiting land use activities within recharge areas.

Vegetation Management - Timber harvesting should be consistent with the Vermont Forest, Parks and Recreation's Acceptable Management Practices.

Deer wintering areas should be managed according to the Vermont Department of Fish and Wildlife's *Management Guide for Deer Wintering Areas in Vermont*, (1990).

When managing timber along streams designated as important wildlife corridors, avoid harvesting trees within 100 feet of a stream.

Energy - New development should reduce energy used for transportation by

- Minimizing unnecessary lengths and widths of new roads in order to reduce energy used for trips, materials, construction, and maintenance;
- Laying out new roads to allow clustering of structures, unit orientation for optimum solar gain, and location of structures in wind shadows;
- Locating development to facilitate creation of public and pooled transportation and promote pedestrian access to activities and facilities within and among settlements;
- Using local materials and labor in construction to reduce transportation energy costs; and
- Providing appropriate opportunities for jobs, retail goods and services within villages and neighborhoods in order to reduce the need for travel.

Involvement with the Regional Economy - Ideally, a new or expanding business affecting Tunbridge should:

- Create community pride and have a positive effect on the community's image;
- Strengthen and preserve the community's assets, particularly those identified in the Town Plan as important;
- Provide fiscal revenues that exceed direct and indirect costs;
- Invest in the community (e.g., sponsor groups and activities, allow community use of land and buildings, build affordable housing, provide day care);
- Help keep money circulating in the community (e.g., be owned by local residents; hire local people; use local resources or products; provide services or products presently obtained from outside community);
- Produce products or services that meet community needs and will benefit the community;
- Add value to a local renewable resource or product (e.g., dairy, cheese factory, furniture manufacturer);
- Be committed to reducing negative environmental impacts; and
- Minimize traffic impacts.
-

Preservation of Historic and Scenic Areas - Ideally, future development will include recognition of and consideration for historic and scenic areas including the following:

Historic:

- Tunbridge Village, listed on the National Register of Historic Places,
- 20 cemeteries, many containing graves of Revolutionary War soldiers, Indian raid victims, and original settlers,
- Indian raid sites,
- Five covered bridges,
- Old grist and saw mill complex,
- Several other historic mill sites, some with dams,
- Brocklebank quarry site,
- Foundry site,
- Four church buildings,
- Original fairgrounds in North Tunbridge
- 12 old one-room schoolhouses still exist, (of 18 existing at one time),
- Birthplace of Joseph Smith’s brother,
- Site of original town meeting house and parade ground (adjacent to site of Rowell covered bridge),
- Site of first settlement (Gilley farm),
- Whitney octagonal barn,
- Town Farm, and
- Numerous historic houses.

Scenic:

- Tunbridge Mountain and western view,
- Sunnyside and peat bog,
- View from top of Strafford Road
- View of Town from the Cilley Bridge, from the Spring Road, from Potash Road,
- Tuttle Hill,
- Strawberry Hill,
- Bicknell Hill, and
- Numerous places along VT Route 110.

MAPS

Map 1 – Transportation

Map 2 – Current Land Use

Map 3 – Utilities, Facilities and Education

Map 4 – Future Land Use

Map 5 – Farming in Tunbridge

Map 6 – Natural Resources

Map 7 – Proposed Vermont Route 110 Corridor

"You can always amend a big plan, but you can never expand a little one. I don't believe in little plans. I believe in plans big enough to meet a situation which we can't possibly foresee now." ~ Harry Truman

APPENDIX A
REPORT FOR THE TUNBRIDGE AGRICULTURAL AND FOREST LANDS SURVEY
APRIL 2006

Submitted by Daniel Ruddell
on behalf of the Tunbridge Planning Commission

Introduction

The Tunbridge Planning Commission, in conjunction with Two-Rivers Ottauquechee Regional Commission (TRORC), Mike Fiorillo's seventh grade students at the Tunbridge Central School, and a number of volunteers, conducted a survey of working lands in Tunbridge during 2005. Judie Lewis of the Tunbridge Listers office provided critical assistance at several stages of the project, which was greatly appreciated.

Input was strictly voluntary, and collected for informational purposes only. The hope was to have this information increase understanding of the current state of our working landscape, and to inform the updating of the Tunbridge Town Plan. The aim was to collect baseline information about working agricultural and forest lands in our town at the beginning of another century. Preliminary project materials including maps and photos were displayed at the Tunbridge Fair in September 2005, and we hope that a more full representation of the results will be similarly presented at next year's Fair. However, the primary purpose of the Survey was documentation of our relationship to the land and contributions to Tunbridge historical archives.

Methods

Based on a brief review of similar projects (which turned up surprisingly few precedents) and discussions by the Tunbridge Planning Commission and Two Rivers-Ottauquechee Regional Commission, an interview form was designed for the Tunbridge Agricultural and Forest Lands Survey 2005. Rob Howe, a dairy farmer in town, was kind enough to come for the first interview, conducted in class with the seventh grade at the Tunbridge Central School. This session gave us our initial inputs for the survey and also allowed us to revise the survey based on the interview process. A modified survey form that emerged from this process is listed as Appendix A.

The students, along with a number of adult volunteers, then traveled to a number of other farms to conduct on-site interviews. These interviews, and several others conducted by Planning Commission members and other volunteers, covered the majority of full-time farms in town. Additional interviews with part-time farmers, and people working lands in Tunbridge who do not consider themselves farmers, were conducted either in person or over the phone with the survey form as a guide.

Information from the surveys was entered into a geographic information system (GIS) utilizing both ArcView 3.2 and ArcGIS 9.0 platforms (Environmental Systems Research Institute, Redlands, CA). This permitted further analysis and display in conjunction with digital parcel maps maintained by the Town of Tunbridge (Fig. 1), as well as other "layers" of maps and information available through the Vermont Center for Geographic Information (VCGI).

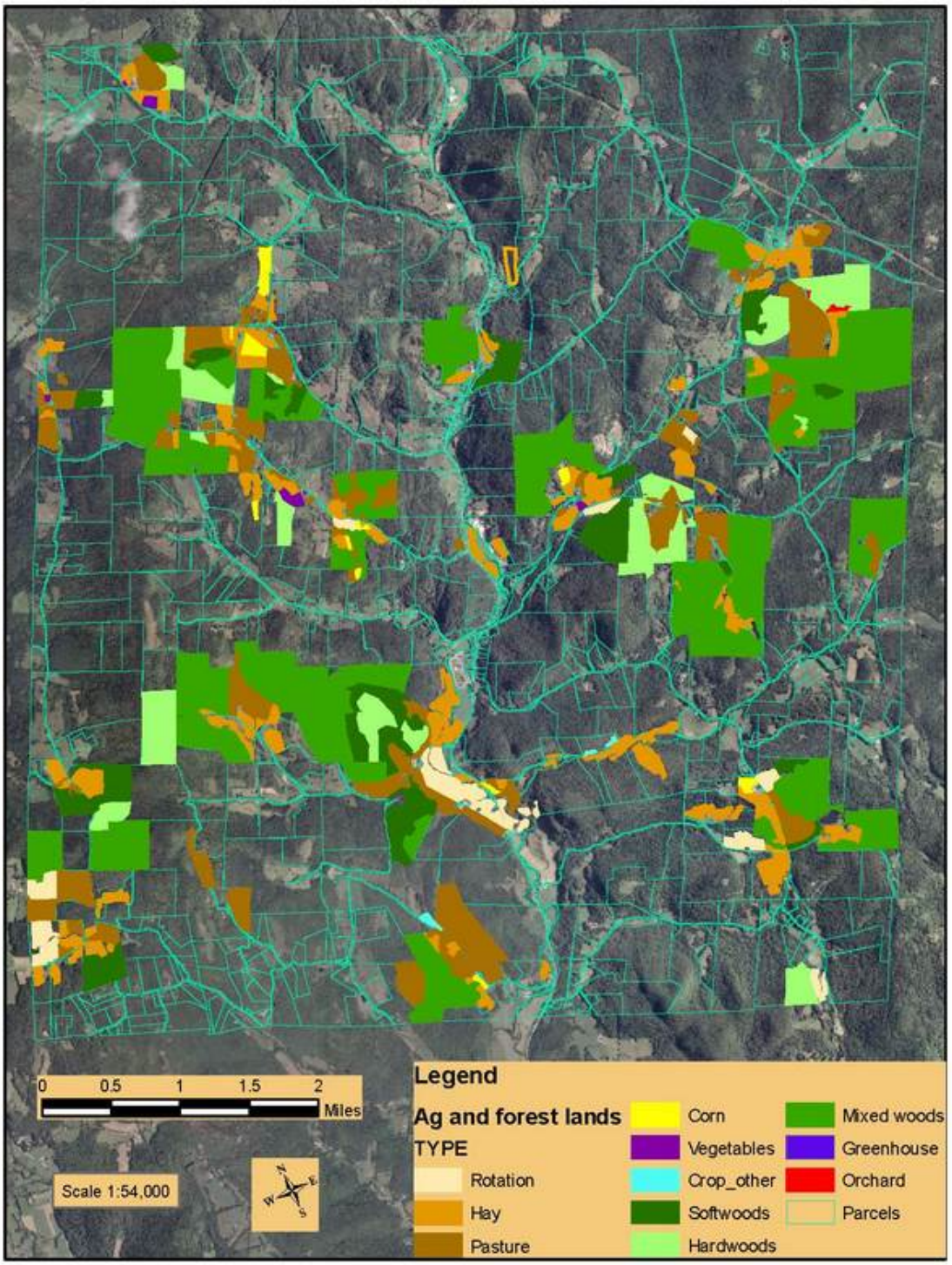


Figure 17.Preliminary field/stand-level mapping based on 2005 Tunbridge working lands survey in relation to town-maintained parcel maps (2005) and National Agricultural Imagery Program aerial photography (2003).

Results

Remotely-sensed land use information from VCGI (LCLU2002) indicates that, as of 2002, approximately 73.6% of the land in Tunbridge was forested, while roughly 14.2% was in agricultural use. In comparison, records maintained by the Tunbridge listers office indicate a lower percentage of wooded land (66.7%) and a higher percentage of agricultural lands (24.0% in combined "pasture" and "crop" categories) when broken out on a per parcel basis (Figure 2).

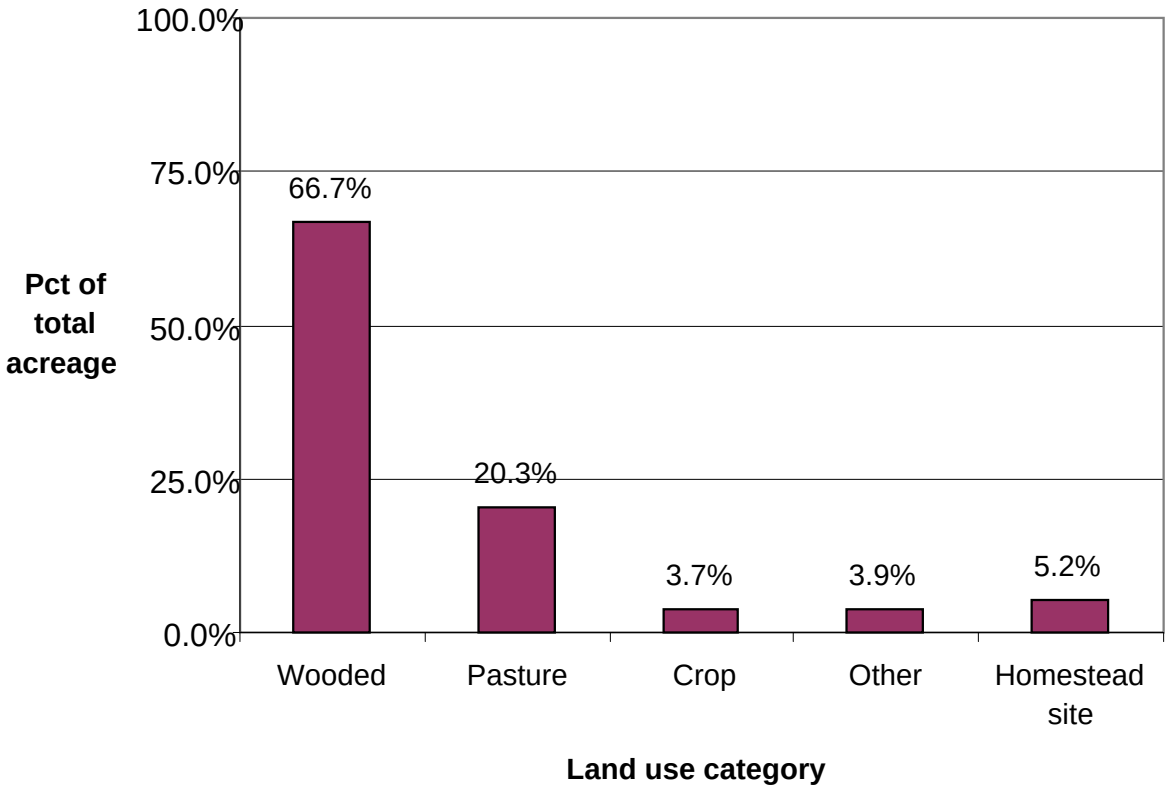


Figure 18. Lister records of land use category as percentage of total acreage, Tunbridge, VT, 2006.

It should be noted that linking of spatial information and lister records was incomplete, with acreage for this report calculated for only 812 parcels (Table 1, "Parcel count"). Records are maintained for 866 properties in Tunbridge, including utility locations, cemeteries, and unlanded properties. In total, acreages for 54 of these properties (including two wooded parcels of approximately 125 and 10 ac, plus one parcel of approximately 12 ac with roughly 10 of those in pasture) were not applicable or not obtained by the time of this report. Though acreage calculations from the lister records for 2006 had been entered, these figures had not been finalized and town parcel maps had not yet been updated to reflect property transfers, subdivisions, and other transactions. In addition, "other" or "miscellaneous" land classifications are sometimes applied to wooded and pasture lands as well as quarries, pits, and other settings. Thus, acreage calculations should be considered rough approximations only, based on best available information. Given these caveats, it is still helpful to get a rough assessment of these lands. Figure 3 offers a visual representation of wooded, crop, and pasture lands as a percentage of total parcel size throughout Tunbridge, based on 2005-2006 lister records.

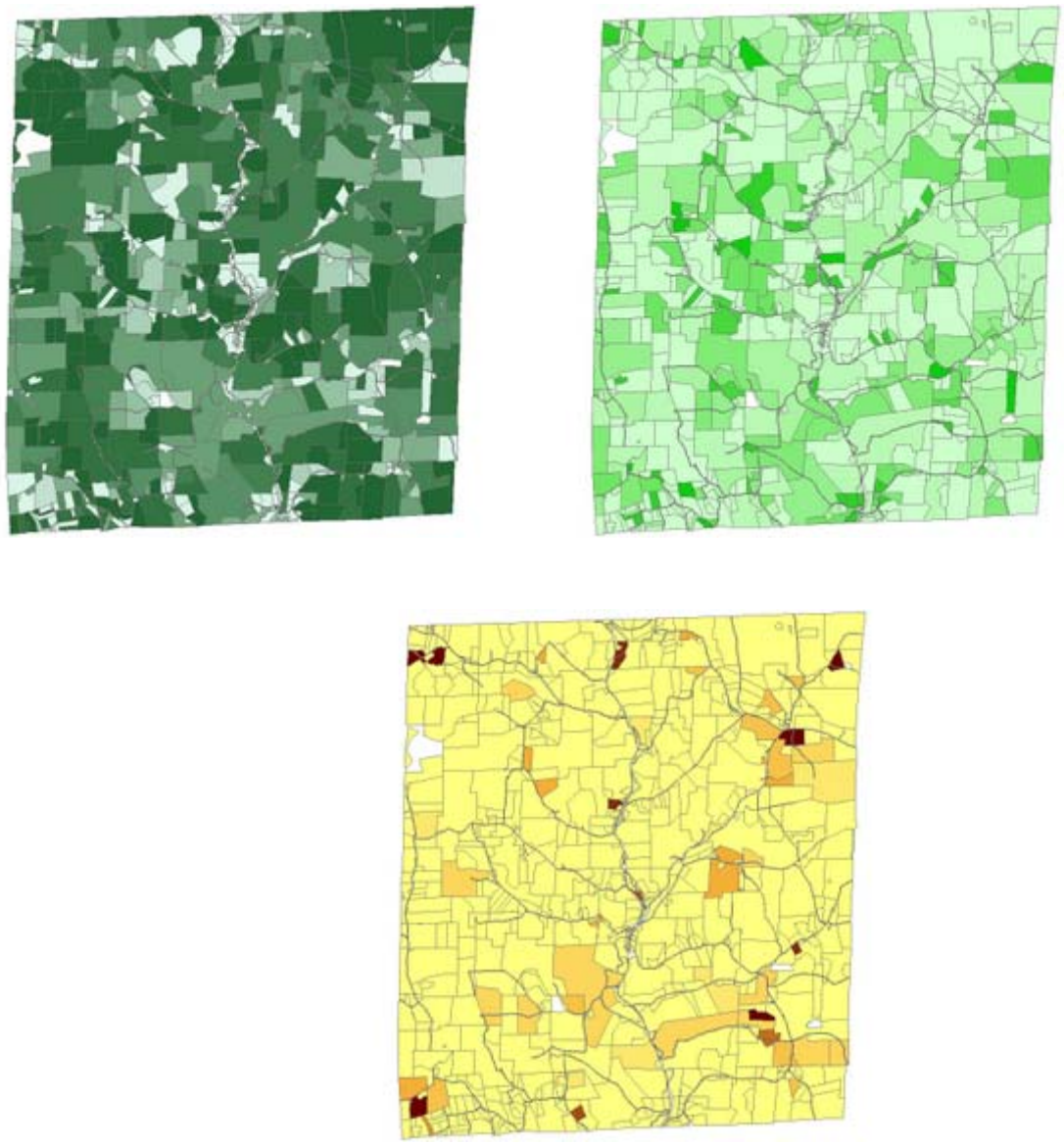


Figure 19. Wooded (top left), pasture (top right), and crop (bottom) as percentage of total parcel acreage based on lister records, Tunbridge, VT 2005-2006. Color gradation is based on 10 percent increments, with the darker colors reflecting higher percentage of land in the given category.

Public records available through the VT Department of Property Valuation and Review and maintained by the Tunbridge Listers office indicate that, as of the April 2006 annual update, there were 156 Tunbridge parcels enrolled in Use Value Appraisal (UVA). UVA, also known as “current use”, is a program designed to encourage maintenance of working lands through taxation of enrolled properties at use value rather than market value. The cumulative UVA-enrolled acreage in Tunbridge accounts for roughly half the land base of the town (Table 1)

Table 1. Land use category acreage statistics based on lister records, Tunbridge, VT, May 2006.

Statistic	Total ac	UVA ac	Wooded	Pasture	Crop	Other	Homestead site
Sum	27591.31	14360.47	18403.38	5587.58	1010.44	1087.24	1429.67
Pct. of total	100.0%	52.0%	66.7%	20.3%	3.7%	3.9%	5.2%
Parcel Count	812	156	464	282	58	167	749
Mean	33.98	92.05	39.66	19.81	17.42	6.51	1.91
Std. Dev.	55.45	79.78	51.49	23.33	15.84	5.35	0.81
Minimum	0	3	0.5	0.5	0.5	0.1	0.07
Maximum	521.1	521.1	519.1	178	93	49	10

As of May 2006, working lands survey interviews and data entry were completed for 80 landowners in Tunbridge. Twenty-four of the landowners interviewed were not enrolled in current use, and fourteen of these were engaged at least part-time in agricultural activities. The 56 interviewed that were enrolled in the Use Value Appraisal program included all landowners enrolled under the Farm (12 parcels) category. Additional interviewees participating in current use were enrolled in the Miscellaneous (6 parcels), Woodland (7 parcels), Residential 1 (1 parcel), Residential 2 (49 parcels), and Vacation 2 (3 parcels) categories. Town-wide UVA enrollment by category (not just those interviewed) is shown in Table 2.

Table 2. UVA program enrolled properties by category, Tunbridge, VT, May 2006.

Farm	12
Miscellaneous	30
Woodland	15
Residential 1 (less than 6 ac)	1
Residential 2 (more than 6 ac)	89
Vacation 2 (more than 6 ac)	9

There currently are 13 dairy farms working land in Tunbridge. Nine of the primary farm families working these lands reside in Tunbridge; this figure does not include other individuals or families employed on these farms. Generally, these farms employ one or two other individuals on a relatively full-time basis.

These farms work approximately 60-70% of the open lands in town. This is primarily for grass/legume production, both hay and pasture, with roughly 10% of Tunbridge's open land devoted to corn production (this figure includes areas in rotation, so actual corn land would be a lower figure in any given year).

The majority of the remainder goes to grass production for beef cattle, sheep, horses, and other livestock. Vegetables and other specialty items (flowers, Xmas trees, nursery stock) account for roughly one percent of the open land in agricultural use. Table 2 indicates the primary endeavor on parcels owned or worked by those interviewed, with dairying representing the leading endeavor in town and grass clearly being the dominant agricultural crop. Efforts were made to indicate when grasslands, in particular, were actually being worked by one of the 13 dairy farmers working land in Tunbridge.

Table 3. Primary endeavor on parcels owned by interviewees (90) through May 2006.
Results from Tunbridge, VT Agricultural and Forest Lands Survey 2005-2006.

Primary Endeavor	Total
Dairy	10
Grass associated with dairy (3 with timber, 1 with syrup also)	12
Rotations (crop/hay) assoc. with dairy (1 with timber also)	7
Grass (1 with syrup also)	16
Timber (1 with wildlife habitat, 7 with grass also; 3 of the grass assoc. with dairy)	14
Beef (1 with syrup also)	6
Sheep (1 with timber also)	5
Goats, llamas	4
Syrup	4
Horses	3
Vegetables	3
Horticulture (one with grass/dairy, one with vegetables also)	2
Christmas trees	1
Greenhouses - specialty	1
Mixed livestock	1
Wildlife habitat, recreation and biodiversity	1

At least 14 families in town have at least one member of the family working full-time in a farm endeavor. At least 13 more families or individuals are involved in part-time agricultural endeavors. At least 50 individuals or families in town keep animals, while no fewer than 40 keep home gardens.

Neither should we ignore our forested landscape. Euclid Farnham's wonderful books on the history of Tunbridge amply depict a change from 80% open land during the height of the sheep craze in the late 1800's to roughly 70% forested today. Vermont produces some of the finest sugar maple and other high-value hardwoods in the world and very few places see the kind of maple regeneration, in particular, that we get here in Orange County. Tunbridge sugarmakers can surely attest to the value of this resource, and survey results indicated there are at least 20 sugarmakers of varying scales in town; this does not include the folks that help in those operations. Generally, sugaring is integrated with other operations, with only 4 sugarmakers in town listing this as their primary endeavor.

Conclusion

The working landscape of the town should not be taken for granted. Repeatedly, interviewees emphasized that if we want our relationship to this land to remain strong, we have to figure out ways to make it profitable. Deputy Agriculture Commissioner David Lane, speaking at an ag issues forum hosted by the Planning Commission, emphasized that the economics of farming require ingenuity, creativity, and perseverance. The fact that there are as many active farms as there are in Tunbridge, where the landscape to some extent dictates a small-scale approach, is testament to these qualities in the hard-working folk who maintain that landscape. The ensuing discussion at the ag issues forum also clarified that farmers farm; land doesn't farm itself. Efforts to conserve working lands are most successful when those efforts are tied to capitalization of viable operations and fostering the creativity and efficiency of the people involved in them. Several speakers noted that efforts focused solely on protection of land can actually work to divert capital away from working lands if careful attention is not paid to these connections.

Agriculture in Tunbridge at the beginning of the twenty-first century presents a microcosm of transitions in agriculture throughout Vermont and the region. The number of active dairy operations in town has declined to a current level of nine actually located in Tunbridge, with four others in neighboring towns working lands in Tunbridge. David Lane noted that average dairy herd size in Vermont is approximately 120 milkers, while Tunbridge herds are primarily in the 40-50 cow range. These operations are representative of long-standing traditions in the area, where efficient operations, careful economies of scale, sales of breeding stock, diversification strategies and creative business practices have maintained the viability of dairying as a central component of Tunbridge's agricultural economy even given the challenges of the local topography and relatively low amount of "prime" agricultural lands. The steady decline of dairies in town, however, is also indicative of the pressures exerted by rising, development-based land values in the area and the vagaries of regional and national markets. The high level of participation in Use Value Appraisal programs by Tunbridge landowners is indicative of the success of that program in helping to maintain the natural resource base underlying our working landscape. We should remain aware, however, that this system is subject to the dictates of the political process and dependent on funding generated from taxes raised elsewhere.

Agricultural sector services require the maintenance of a critical mass to support related industries, and we are lucky to be in an area that still maintains many of these services. Local sugarmakers felt the impacts of another local equipment supplier closing up shop in the last year, and it doesn't take many half-to-full days fetching supplies and equipment to begin to appreciate having an intact agricultural economy in all its facets. The small stream-based mills of our past have largely gone by the wayside, and agricultural infrastructure is largely invisible to much of our population.

There are several thriving vegetable operations in town, and a strong tradition of home gardens continues to flourish. Small-scale Christmas trees, specialty greenhouses, a thriving horticultural enterprise (which provides the basis for the bulk of annual fundraising for the town Library), and a strong barter economy indicate just some of the more intensive uses of Tunbridge lands that comprise a less visible but no less vibrant face of Tunbridge agriculture. As noted frequently at community-wide meetings, however, the pastoral qualities of the Tunbridge landscape are strongly tied to the open land-base of animal-based agriculture. Tunbridge farmers have diversified operations to involve beef cattle, horses, sheep, llamas, goats, and poultry, primarily at a small scale and utilizing local and creative marketing opportunities. However, one dairy farmer interviewed noted that, with the transition of another farm out of dairying in Tunbridge in the last year, it was the first time in his memory that there appeared to be more hay land available in town than farmers to hay it. Additionally, it was noted at one of the 2005 Tunbridge community –wide planning input meetings that a common scenario in town is that marginal pasture lands are reverting to forest, while marginal haylands are now being pastured.

As is common in Tunbridge, this scenario has been perceived as both challenge and opportunity. It is notable that several voluntary efforts have been initiated to re-establish riparian buffers along the First Branch of the White River, contributing to farsighted and difficult decisions to help stabilize stream banks, provide cover to help lower elevated water temperatures, and improve water quality by reducing sedimentation. These are much less visible water quality issues, and thus require more foresight, understanding, and commitment, than some of the more obvious land use and sewage impacts to fisheries and stream health that presented an easier starting point for remediation efforts in the past. Several farms in town have undertaken organic growing and marketing practices. Farmer's markets currently operate in Chelsea on Wednesday afternoons and in South Royalton on Thursday afternoons. Cooperative markets in South Royalton and White River, in particular, have begun to emphasize and strengthen efforts to support local agriculture by "putting our money where our mouths are" and keep

money circulating within the local economy. Surrounding communities have embarked on efforts to increase connections between shool lunch programs and local growers. Many of these efforts dovetail well with current discussions being initiated within Tunbridge to assess the implications and opportunities associated with coming changes in global oil production and energy supply shifts.

One farm family working lands in Tunbridge has recently purchased a local sawmill, helping diversify their operation and create value-added products from their lands as well as providing opportunities for others to do the same. Several other farmers similarly operate or maintain access to mills that have added to self-sufficiency over the years. Maple pest outbreaks and residual stress effects of drought years in the early 2000s saw some sugarmakers choose to rest their trees in the past couple years, indicating the kind of flexibility and wide vision that has kept Tunbridge working lands viable. While "prime" agricultural land may appear to be a precious commodity in Tunbridge, there is an understanding that the rich soils, ample water, and favorable bedrock that Tunbridge is founded upon offer sufficient opportunities for providing sustenance and well-guided enterprise.

It is clear that a working landscape embodies the character of Tunbridge that we hold dear. The maintenance of that character will require the same qualities of ingenuity, creativity and perseverance at a community level as David Lane noted is required at an individual level, and the best encouragement we can offer to all engaged in the continuation of these traditions. We hope that this survey might contribute in some small way to those efforts.

"There is a sufficiency in the world for man's need but not for man's greed."

~ Mohandas K. Gandhi

APPENDIX A.1
SURVEY FORM, TUNBRIDGE AG AND FOREST LANDS SURVEY
2005

Owner/Interviewee(s):
Interviewers:
Date:

How many acres of working lands do you have or use?

A. Land that you own:

B. Land that someone else owns:

Other landowners whose land you work (Please indicate rent, lease, other arrangement and approximate acreage):

Do you farm? FT (full time) PT (part time) N (no)

Any off-farm income? Y N

Do you plan to farm? Y N

Anyone in line to farm? Y N

Any plans to keep working lands in use? (Please specify)

Primary farm/woodlands endeavor(s) (e.g., dairy, vegetables, sheep, timber, Xmas trees)

Animals---type, how many

Agricultural lands. Please circle any that apply.

Row crops: Corn Vegetables Other Hay Pasture

Crop, other (please specify) Rotations (Please specify)

Value added products? (e.g., yogurt, cheese, bottled milk, salsa, tinctures, vinegar, juice)

Any markets? (Please specify)

Estimated annual sales (use an appropriate scale, e.g., lbs. of milk, no. of CSA customers, lbs. of meat or vegetables):

Is your land owner-worked? Y N

If not: Rented Leased

Other arrangement (please specify)

Worked by who?

Organic? Y N

Home garden? Y N

Forest lands

Do you have a forest management plan? Y N

Forester:

Primary management objective(s): Timber Wildlife habitat

Recreation Biodiversity Other (please specify)

Sugaring? How many taps?

Value-added products (e.g., sawn lumber, furniture, birdhouses, bowls, etc.)

Forest types: Please circle any that apply.

White pine Red pine Spruce/fir Northern hardwoods

Hemlock Oak Cedar

Mixed (please specify) Other (please specify)

Crop trees. Please indicate if the owner has (had), apples, butternuts, chestnuts, or other fruit or crop trees that are utilized (please specify).

THANK YOU!

Please feel free to record additional comments on the reverse side of this sheet.

APPENDIX B
FURTHER RESOURCES

Agriculture:

Agriview
Vermont Agency of Agriculture, Food and Markets
116 State St., Drawer 20
Montpelier, Vermont 05620
www.vermontagriculture.com/agriviewonline.htm

Consulting Foresters of Vermont
www.cfavt.org

Country Folks newspaper
www.countryfolks.com

Farm Journal
www.farmjournal.com

Miner Agriculture Research Institute
1034 Miner Farm Road, PO Box 90
Chazy, New York 12921
518-846-7121
518-846-8445 (fax)
www.whminer.com

Northeast Farmer Magazine
www.northeastfarmer.com

Northeast Organic Farming Association – Vermont
PO Box 697
Richmond, VT 05477
802-434-4122
802-434-4154 (fax)
www.nofavt.org

Northeast Organic Dairy Producers Alliance
30 Keets Rd
Deerfield, MA 01342
www.organicmilk.org

Orange County Forester - David Paganelli
5 Perry Street
Barre, VT 05641-4265
802-476-0173
david.paganelli@state.vt.us

Small Farmer's Journal
www.smallfarmersjournal.com

Smartwood
65 Millet Street, Suite 201
Richmond, Vermont 05477
802-434-5491
802-434-3116 (fax)
info@ra.org

USDA Natural Resources Conservation Service
28 FarmVu Drive
White River Junction, VT 05001-6001
802-295-7942
802-296-3654 fax

UVM Agricultural and Environmental Testing Lab (soil testing)
219 Hills Building
Burlington, VT 05405
802-656-3030

UVM Center for Sustainable Agriculture
63 Carrigan Drive
Burlington, VT 05405
802-656-5459
802-656-8874 (fax)
Sustainable.agriculture@uvm.edu

Vermont Agency of Agriculture
116 State Street
Montpelier, VT 05620
802-828-2416
www.vermontagriculture.com

Vermont Agency of Natural Resources
Division of Forests, Park and Recreation
www.vtfpr.org/htm/forestry.cfm

Vermont Beef Producer's Association
http://www.vermontbeefproducers.org/

Vermont Farm Bureau
2083 East Main Street
Richmond, VT 05477
802-434-5646
www.vtfb.org

Vermont Farm Service Agency
356 Mountain View Drive Suite 104
Colchester, VT 05446
802-658-2803
802-660-0953 (fax)

Vermont Land Trust
8 Bailey Ave
Montpelier, VT 05602
802-223-5234
info@vlt.org

Vermont Pasture Network/Vermont Grass Farmers Association
UVM Center for Sustainable Agriculture
63 Carrigan Drive
Burlington, VT 05405
802-656-5459
802-656-8874 (fax)
pasture@uvm.edu

Vermont Vegetable and Berry Growers Association
University of Vermont Extension
11 University Way
Brattleboro, VT 05301-3669
802-257-7967 ext. 13

Vital Communities
104 Railroad Row
White River Junction, VT 05001
802-291-9100
802-291-9107 (fax)

WDEV, 96.1 FM and 550 AM
Across the Fence

Women's Agricultural Network
617 Comstock Road, Suite 5
Berlin, VT 05602
802-223-2389
802-223-6500 (fax)
wagn@zoo.uvm.edu

Demographics:
Center for Rural Studies
University of Vermont
207 Morrill Hall
Burlington, VT 05405
Home page - http://crs.uvm.edu/
Agriculture - http://crs.uvm.edu/agriculture.htm
Human Services and Education - http://crs.uvm.edu/education/
Rural Community and Economic Dev. - http://crs.uvm.edu/economic.htm
U.S., State, Regional, & Local Gov. Sites - http://crs.uvm.edu/links.htm
VT State Data Center (U.S. Census Bureau info. and data - http://crs.uvm.edu/census/estimates/town/

Efficient Building/Housing:
BuildingGreen
http://www.buildinggreen.com/

EPA's Green Building Workgroup
http://www.epa.gov/greenbuilding/

Energy Star
http://www.energystar.gov/

Green Building Resource Center
http://www.globalgreen.org/gbrc/index.htm

Green Building Resource Guide
http://www.greenguide.com/

Greenhomebuilding
http://www.greenhomebuilding.comHousing resources
http://www.centralvtplanning.com/CVHRG.pdf

SustainableABC.com
http://www.sustainableabc.com/

What's Working Inc.
http://www.greenbuilding.com/

Energy:
Efficiency Vermont
http://ww.efficiencyvermont.org/pages/

Institute for Energy and the Environment, Vermont Law School
P.O. Box 96
South Royalton, VT 05068
802-831-1217
Michael Dworkin, Director; Jane D'Antonio, Institute Administrator

Sustainable Energy Resource Group
432 Ulman Rd., Thetford Center, VT 05075
802-785-4126
www.SERG-info.org

Land:
Act 250 Statutes, Title 10, Chapter 151: State Land Use and Development Plans
http://www.nrb.state.vt.us/lup/statute.htm

Land Use Institute, Vermont Law School
P.O. Box 96
South Royalton, VT 05068
802-831-1217
Kinvin Wroth, Director; Jane D'Antonio, Institute Administrator

Upper Valley Land Trust
19 Buck Road
Hanover, NH 03755
603-643-6626
www.uvlt.org

Use Value Appraisal (UVA, also known as Current Use) Program
802-828-5869
vttaxdept@tax.state.vt.us (e-mail)

Vermont Land Trust
8 Bailey Avenue
Montpelier, VT 05602
802-223-5234 or 800-639-1709
www.vlt.org

Natural Resources:
Conservation Reserve Enhancement Program
802-828-1289
http://www.vermontagriculture.com/CREPwebsite/Home/Home.htm
Laura Hanrahan, Statewide CREP Coordinator - laura@agr.state.vt.us
Brochure - http://www.vermontagriculture.com/CREPwebsite/Home/documents/CREPBrochure2.pdf

Consulting Foresters Association of Vermont
http://www.cfavt.org/

Vermont Agency of Natural Resources
http://www.anr.state.vt.us/index.cfm
River Corridor Planning - http://www.anr.state.vt.us/dec/waterq/rivers/docs/rv_mngmntalternatives.pdf
Vermont Wetlands Section Homepage - http://www.anr.state.vt.us/dec/waterq/wetlands.htm
Vermont River Corridors Management - http://www.anr.state.vt.us/dec/waterq/rivers.htm
(River Corridor Management, Flood Hazard Management, Geomorphic Assessment)

Vermont Department of Environmental Conservation
103 South Main Street
Waterbury, VT 05671-0401
802-241-3808
802-244-5141 (fax)
http://www.anr.state.vt.us/dec/dec.htm

Vermont Department of Environmental Conservation
Water Quality Division
103 South Main Street, Building 10 North
Waterbury, VT 05671-0408
802-241-3770 or 802-241-3777
802-241-3287 (fax)

Vermont Fish & Wildlife Department
103 South Main Street
Waterbury, VT 05671-0501
802-241-3700
http://www.vtfishandwildlife.com/

Vermont Department of Forests, Parks & Recreation
103 South Main Street
Waterbury, Vermont 05671-0601
802-244-1481 (fax)
http://www.vtfpr.org/

The Vermont Geological Survey
103 South Main St., Logue Cottage
Waterbury, VT 05671-2420
802-241-3608
802-241-4585 (fax)
http://www.anr.state.vt.us/dec/geo/vgs.htm

Vermont Rural Water Association
20 Susie Wilson Road, Suite B
Essex Junction, VT 05452-2827
802-660-4988 or 800-556-3792
866-378-7213 (fax)
http://www.vtruralwater.org

Vermont State Department Divisions & Offices
Business Office - 802-241-3650
Commissioner's Office - 802-241-3670
Conservation Education - 802-241-3651
Forestry - 802-241-3678
Lands - 802-241-3693
State Parks - 802-241-3655

White River Basin Plan
http://www.anr.state.vt.us/dec/waterq/planning/docs/pl_wrbplan.pdf
Executive summary - http://www.anr.state.vt.us/dec/waterq/planning/docs/pl_wrbplan-execsum.pdf

The White River Partnership
99 Ranger Road
Rochester, VT 05767
(802) 767-4600
http://www.whiteriverpartnership.org/

Transportation:
National Center for Safe Routes to School
One National Life Drive, Drawer 33
Montpelier, VT 05633-5001
1-866-610-SRTS / 802-828-0059
http://www.saferoutesinfo.org/
John Kaplan, VT Safe Routes to School Coordinator, e-mail: jon.kaplan@state.vt.us

Stagecoach Transportation Services, Inc.
P.O. Box 356
Randolph, VT 05060
802-728-3773
http://www.stagecoach-rides.org

Statewide Transportation Improvement Plan
One National Life Drive, Drawer 33
Montpelier, VT 05633-5001
http://www.aot.state.vt.us/planning/STIPgeneral.htm
802-828-5578 Matthew Langham, Improvement Program Coord., e-mail:
matthew.langham@state.vt.us

Upper Valley Rideshare
P.O. Box 1027
Wilder, VT 05088
802-295-1824
http://www.uppervalleyrideshare.com/

Vermont Agency of Transportation
221 Beswick Drive
White River Junction, VT 05001
http://www.aot.state.vt.us/
802-295-8888 David E. Lathrop, AOT Manager District #4, e-mail: dave.lathrop@state.vt.us
802-828-9959 Tom Urell, Rte. 110 District Mgr, e-mail: tom.urell@state.vt.us

Vermont Park and Ride
One National Life Drive, Drawer 33
Montpelier, VT 05633-5001
http://www.aot.state.vt.us/parknride/
802-828-5609 Wayne Davis, Project Supervisor, e-mail: Wayne.Davis@state.vt.us

Vermont Public Transportation Association
212 Holiday Drive, Suite 1
White River Junction, VT 05001-2097
802-296-2143 / 877 5 RIDEVT
http://www.vpta.net/

Vermont State Rail Program
One National Life Drive, Drawer 33
Montpelier, VT 05633-5001
http://www.vermontrailroads.com/
802-828-1331 Dick Hosking, Operations Rail Program Manager, e-mail: Dick.Hosking@state.vt.us

VTrans Public Transit
http://www.aot.state.vt.us/publictrans/transit.htm
802-864-0211 Charles Gallagher, Public Transit Administrator, e-mail: Charles.Gallagher@state.vt.us

As for the future, your task is not to forsee it, but to enable it. -Antoine de Saint Exupery