

Putney Rural Districts Analysis

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BACKGROUND AND PROJECT GOALS

In 2001, the Town of Putney Planning Commission applied for and received a Municipal Planning Grant from the State of Vermont to conduct a detailed inventory and assessment of the Rural Residential Zoning District. The Windham Regional Commission (WRC) is acting as project consultant to the Town in performing this inventory and assessment.

In the end, because many of the physical features found in the Rural Residential District are also found in the Conservation and Resource Districts, because these three districts share common borders, and because any re-zoning regarding the Rural Residential District would probably involve the Conservation and Resource Districts, all three zoning districts were assessed as part of this study.

This project accomplishes or acts upon a number of actions steps outlined in the Putney Town Plan, including the following action steps:

1. Map the density of existing settlement, to establish a baseline for evaluating the impact of additional growth on Town services, natural resources, and scenic areas. Compare with planned densities based on Land Use Classifications and current Zoning Districts. Map areas appropriate for future settlement, or increased density, and those that may be in danger of over-development.
2. Evaluate the current method of defining zoning districts based on fixed dimensions from Town roads. Explore options for more site-specific district boundaries, perhaps incorporating geographic features, existing uses, parcel boundaries and density requirements.
3. Inventory and map parcels with deeded or other development restrictions as an aid to planning for future development.
4. Evaluate the current Rural Residential Zoning requirements. Determine if there are areas within the District that have limitations to development and are not suitable to two acre lot density. Identify areas outside the District that are suitable for two acre lot size.

The goals of the Putney Rural Districts Analysis project are to:

- 1) Examine the existing conditions in the Rural Residential, Resource, and Conservation Districts (with a particular emphasis on the Rural Residential District), including development, physical constraints, and natural resources; and
- 2) Determine what kind of growth can take place in these districts given these existing conditions and the Town's zoning regulations.

The project examines existing conditions by inventorying a number of features in the three zoning districts: Rural Residential, Resource, and Conservation. Using existing and newly-developed Geographic Information System (GIS) data, the estimated date of construction and zoning district location for all major structures in town was determined. Population and development projections for Putney were produced. Overall development density for the town was mapped using several different methods.

The project determines the growth potential for the Town by performing a buildout analysis. The analysis determines the maximum number of potential new structures based upon current structures, parcel size, and zoning.

Many natural and cultural resources and physical constraints were inventoried in the three districts. These inventoried features include septic suitability of soils, agricultural lands, agricultural soils, open space, conservation land (lands excluded from development), and lands enrolled in Vermont’s Use Value Appraisal program. The location of these features with respect to the Town’s zoning districts and the Town Plan policies was determined and evaluated, and recommendations for changing the zoning regulations and other courses of action to help deal with growth issues in Putney were presented.

The final products of this project are:

- 1) A GIS-based inventory and analysis of features in the Rural Residential, Resource, and Conservation Districts, including development, development trends, development projections, conservation lands, agricultural resources, and septic suitability; and
- 2) A buildout analysis providing information on the buildout status of parcels and the potential for development in the three districts.

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PUTNEY’S PLANNING GOALS

OVERALL GOALS

Putney’s 2000 Town Plan contains language outlining the Town’s goals for areas outside the village. The Plan’s objective is to “maintain the Town’s existing settlement pattern of a Central Village core surrounded by undeveloped woodland and pastureland, farm and orchard lands, and scattered rural/residential settlements.”

In addition, the Plan wishes to “ensure protection of fish and wildlife habitats; areas hosting Natural Heritage or federally identified endangered and threatened species; unique and fragile natural areas; wetlands; shorelands; floodplains; aquifer recharge areas; steep slopes; ridgelines; essentially undeveloped forest lands which has limited access to an improved public road; and regionally significant scenic corridors and areas from development that would negatively impact the resource.”

The Plan contains strong language with regards to agriculture. A stated policy is to “require that prime agricultural soils be devoted to agriculture or to alternate uses which will insure the preservation of their agricultural potential.” One way to accomplish this is through another Plan policy that directs the Town to “encourage acquisition of development rights by conservation organizations such as private nonprofit land trusts or government agency.”

Putney’s Town Plan places land into one of eight land use districts, and these districts coincide with the Town’s zoning districts (see Map One, Zoning Districts). This project examines three of these districts with the most rural planning goals: rural residential, resource, and conservation.

LAND USE/ZONING DISTRICT DESCRIPTIONS AND GOALS

Rural Residential District

The Rural Residential District is the largest district in Putney, covering 45 percent of the town. According to the Town Plan, lands in the District are either already committed to rural development or can accommodate future growth. In much of Putney, the District is a strip 750 feet from either side of Federal, Class 2, or Class 3 highways.

An important statement in the Plan is that “Rural Residential Areas should be used to accommodate a major proportion of the growth of permanent and vacation homes in Putney.” The plan acknowledges areas of the District have limitations to development and uses such as agriculture and forestry, but overall residential growth in the District is to be expected. The Plan suggests, and the zoning regulations require, a lot area minimum for each single or two family dwelling or nonresidential use of two acres.

Resource District

Resource lands cover roughly one-fourth of Putney, but do not dominate any one portion of the town. They are found throughout the town in narrow bands adjacent to the Rural Residential Districts. According to the Plan, they “generally have high natural, recreational, scenic or other special resource values or which have substantial critical or serious physical limitations for development.” Where development does occur, it is typically at low densities.

The Plan calls for Resource lands to be used for agriculture, forests, recreational and open space uses, and low-density housing. The Plan suggests, and the zoning regulations require, a lot area minimum for each single or two-family dwelling or nonresidential use of 10 acres, unless limitations to development exist.

Conservation District

Conservation lands also cover roughly one-fourth of Putney. They are large, essentially undeveloped areas generally set back 1500 feet from Federal, Class 2, or Class 3

highways. They “are predominantly forested with substantial physical limitations to development.”

The Plan calls for Conservation lands to be used principally for agriculture, forestry, recreation and open space. The Plan suggests, and the zoning regulations require, a lot area minimum for each single or two-family dwelling or nonresidential use of 20 acres, unless limitations to development exist.

Summary

One way to see if the objectives and goals are being met is to map where development recently has taken place. Another way is to examine the natural features found in each zoning district, and determine if the zoning regulations are in conflict with the Plan’s objectives and goals about the uses and preservation of these features. A buildout analysis can help provide insight into where and how much development could take place in each district.

This study examines the Rural Residential, Resource, and Conservation Zoning Districts with the above goals in mind.

DEVELOPMENT PATTERNS

INTRODUCTION

One Town Plan goal states “Map the density of existing settlement, to establish a baseline for evaluating the impact of additional growth on Town services, natural resources, and scenic areas. Compare with planned densities based on Land Use Classifications and current Zoning Districts.” An attempt to actually map “density” is discussed later in this report. To provide a more robust understanding of the settlement, or development, data on structures and their locations were analyzed and past development trends were evaluated. This work was done using both numeric and geographic data.

EXISTING CONDITIONS

In 2000, according to U.S. Census Bureau data, there were 1049 housing units (e.g. a house, apartment, mobile home, trailer, group of rooms, etc.) in Putney. A housing unit is not necessarily a house; one residential structure may contain more than one housing unit.

In 2002, according to Enhanced 911 mapping, there were 894 residential structures (i.e. houses, apartment buildings) in Putney. There are a total of 1043 primary structures (occupied structures such as houses, commercial buildings, schools, churches, etc.). Table One shows the number of these structures in each of Putney’s zoning districts.

Table One – Structures by Zoning District

Zoning district	Total buildings	Percent of total buildings	District acreage	Percent of town
conservation	36	3	4082	24
hamlet	41	4	362	2
highway commercial	32	3	185	1
multi-use	13	1	99	1
resource	89	9	3909	23
rural residential	642	62	7962	47
village	190	18	513	3
Total	1043		17112	

PAST DEVELOPMENT TRENDS

U.S. Census Bureau data

According to U.S. Census Bureau data, between 1960 and 1970 there was a 16% increase in housing units, from 419 to 486. Between 1970 and 1980 there was a 74% increase in housing units, from 486 to 847. Between 1980 and 1990 there was a 20% increase in housing units, from 847 to 1016. Between 1990 and 2000, there was a 3% increase in housing units, from 1016 to 1049.

The 1970s rate of growth in housing units was the highest in the past 60 years. The 1990s rate of growth in housing units was the lowest in the past 60 years. The rate of growth of housing units in Putney has steadily decreased over the past 30 years. This trend is mirrored in the neighboring towns of Westminster and Dummerston.

Resort towns in the western part of the Windham Region saw sharp increases in housing units during the 1960s, 1970s, and/or 1980s, but again the rate of growth has decreased in the 1990s.

Windham County as a whole shows slow to moderate growth in the 1950s (10%) and the 1990s (5%), with the 1960s (27%), 1970s (35%) and 1980s (32%) being high growth decades. Most other counties in Vermont show a similar trend. In Chittenden County, Vermont’s most populated county, the growth in housing units has decreased in the 1990s as well, but only by about half. The 1980s saw over 10,000 new housing units, an increase of 26%. The 1990s saw roughly 6800 new housing units, an increase of only 13%.

In summary, according to U.S. Census Bureau figures, Putney, Windham County, and much of Vermont saw the rate of new housing unit construction during the 1990s to be much less than in the previous 30 to 40 years.

WRC Structures Analysis

The Windham Regional Commission set out to map the growth of structures (not housing units) in Putney using a variety of sources, including 1950s topographic maps, 1962 aerial photographs, 1974 and 2000 orthophotographs, Putney zoning applications from 1978 to 2000, and 2002 Enhanced 911 structures mapping. Structures were placed into one of three construction date ranges: pre-1962; 1962-1977; and 1978-2002. While this mapping should not be looked upon as accurate on a site-specific basis, and the actual numbers are only estimates, the data do provide insight into general growth trends in the Town.

Using the 1043 structures in the Enhanced 911 data as a starting point, WRC determined that 366 of these structures were present in 1962. Zoning records applied to the E911 data and the orthophotos attributed 181 of the 1043 primary structures to having been constructed from 1978 to 2000. For the remaining 496 structures, 329 were found on the 1974 orthophotos, and these were coded as 1962-1977 construction. One hundred sixty-nine structures were not found on the 1974 orthophotos, and these were coded as 1978-2002 construction. While we assumed these 169 structures were constructed after 1978 (in retrospect, a questionable assumption), it is probable that some, if not many of these structures were constructed between 1974 and 1978.

The WRC analysis showed that between 1962 and 1977 (16 years), there was a 90% increase in the number of structures, from 366 to 694. Between 1978 and 2002 (24 years), there was a 50% increase in the number of structures, from 694 to 1043. Table Two shows the results of this analysis, broken down by zoning district. Map Two, New Structures 1962-2002, shows the location of new structures in Putney.

Table Two – Existing Development to 2002 by Zoning District

Zoning district	Pre-1962 buildings	New buildings 1962-1977	New buildings 1978-2002	Percent increase 1978-2002	Percent increase 1962-2002
conservation	0	4	32	n/a	n/a
hamlet	9	17	15	58	356
highway comm.	8	16	8	33	300
multi-use	3	8	2	18	333
resource	17	25	47	112	424
rural residential	180	237	225	54	257
village	149	21	20	12	28
Total	366	328	349	50	185

While the time periods of the WRC analysis don't match those of the U.S. Census Bureau data, some similar trends can be seen. The Census Bureau data show a major increase in housing units in the 1970s. In retrospect, placing the 169 structures that were most likely constructed in 1974 or after into the 1978-2002 category may not have been the best option. Many of these structures were probably constructed between 1974 and 1978, and

perhaps they should be placed in the 1962-1977 category. Assuming half these structures were constructed between 1974 and 1978 would result in an adjusted figure of 265 new structures between 1978 and 2002. This more closely matches those trends shown in the U.S. Census Bureau data.

Thus it is believed that the estimated growth for 1978-2002 is a bit too high. Also, it is believed that much of the growth during that time took place earlier in that 24 year period. Putney's zoning records back this up; in the 1980s, an average of 12 structures per year were constructed; in the 1990s, the average was seven structures per year.

PROJECTIONS

Introduction

Growth rates over the past 30 years have been highly variable. Estimating growth in residential units over the next 10 years is a difficult task. Projecting these estimates out over a period of 30 years is highly speculative.

When making these projections, we employed actual numbers of new housing units or structures per year, as opposed to growth rates (the percentage). Applying a 10-year positive growth rate over successive 10 year periods assumes a constant growth rate and results in an ever increasing number of structures being constructed in each ten year period. This is inconsistent with the trends of the past 30 years, which show a declining growth rate and a decreasing number of structures being constructed.

Using a constant absolute number of new structures in successive 10 year periods actually may be seen as a slight overestimation, as in recent decades the absolute number of new structures has been decreasing, not staying constant. We did not factor in a rate of decrease for these projections, as it would result in a leveling off to practically no growth, an unlikely scenario.

Moderately low projection

If we assume that the growth of housing units during the 1990s will continue unchanged into the future, then 33 housing units would be constructed every 10 years. Assuming 1.17 units per residential structure (1049 housing units divided by 894 residential structures), that would be 28 new residential structures every 10 years. In 2013 there would be 922 structures, in 2023 there would be 950, in 2033 there would be 978.

We consider these estimates to be "moderately low." These estimates are based on the growth rate in the 1990s. In Putney and in Windham County as a whole, this rate is the lowest in the past 60 years, and probably would not continue in the long term. Map Three, Possible 30 Year Growth Scenario, Moderately Low Projection, shows one scenario of what Putney might look like in 2033 given these projections.

Moderately high projection

If we assume that the growth of housing units during the 1990s was atypically low, and that housing unit rates will return to levels similar to the later part of the 1980s, then we chose a figure of 10 new structures per year, or 100 new structures every 10 years. This is close to the average number of structures constructed from 1980-1999 based on zoning records. It is also close to the adjusted number of structures constructed from 1978-2002 as determined from the WRC structures analysis: 264 over 24 years. Assuming 100 new structures every 10 years gives the following: in 2013 there would be 994 structures, in 2023 there would be 1094 structures, in 2033 there would be 1194 structures.

We consider these estimates to be “moderately high.” They are based on growth rates that seem more typical of those over the past 60 years, but have not been seen in the past 10 to 15 years. Map Four, Possible 30 Year Growth Scenario, Moderately High Projection, shows one scenario what Putney might look like in 2033 given these projections.

High projection

If we assume that the growth of housing units during the 1980s is reflective of growth rates that will be experienced in the future, then 169 housing units would be constructed every 10 years. That would be 144 new structures every ten years. In 2013 there would be 1038 structures, in 2023 there would be 1182, in 2033 there would be 1326.

We consider these estimates to be “high.” These estimates are based on growth rates in the 1980s, which for Putney and many other towns in Windham County appear to be somewhat higher than average, and probably can be attributed to carry-over from the unusually high rates of the 1970’s. Current trends do not seem to indicate a return to 1980s growth rates in the near future at least.

CONSERVATION LANDS AND OTHER LANDS WITH DEVELOPMENT RESTRICTIONS

INTRODUCTION

The 2000 Putney Town Plan includes a Land Use Action step which directs the town to “inventory and map parcels with deeded or other development restrictions as an aid to planning for future development.”

The Windham Regional Commission has worked closely with the Town of Putney and the Putney Mountain Association to map conservation lands in town. The results of this work, in conjunction with data from the Vermont Land Trust (VLT), provide a picture of those lands in Putney that can be considered “conservation lands” and, due to legal restrictions or management goals, will not or are not likely to see development occur.

These data from WRC and VLT have become part of Vermont's Conserved Lands Database.

Parcels enrolled in Vermont's Use Value Appraisal (UVA) Program were also mapped. According to the Vermont Heritage Network website, "use value appraisal is a method available to Vermont landowners to lower or stabilize their property taxes based on the productive use of the land rather than its fair market value. The program, implemented in 1980, enables and encourages farm and forestry landowners to maintain the productive use of eligible lands on a long term basis" (the Vermont Heritage Network is a project of the University of Vermont's Historic Preservation Program).

Enrollment in UVA, also known as the "current use program," is not a direct, long-term restriction to development, but most lands enrolled in UVA are perhaps less likely than other lands to see development in the next several years. Also, mapping UVA-enrolled lands give an indication of those parcels in active agricultural or forestry use. These lands are possibly less likely to be owned for real estate speculation and development.

RESULTS

There are over 1000 acres of what are termed "conservation lands" in the Town of Putney, and they comprise 6.6 percent of the town's acreage. Map Five shows the conservation lands in Putney.

The Vermont Land Trust holds conservation easements on 486 acres of privately-owned land. The Putney Mountain Association holds 111 acres in Putney, and some of their lands also have conservation easements. The Connecticut River Watershed Council owns 10 acres, the State of Vermont less than one, and the U.S. Fish and Wildlife Service 200. Approximately 262 acres of town-owned land, for the purposes of this study, have been considered conservation lands (note that this includes the entire Putney Central School lands, the Putney Pool, and the softball fields, the latter two not truly town-owned).

At 6.6 percent of total acreage, Putney's conservation lands percentage is just slightly less than that of Westminster and Rockingham (seven and eight percent, respectively). Putney's percentage is considerably less than the other Connecticut River valley towns in Windham County, however; Dummerston's percentage is ten, Brattleboro's is 14, and Vernon's is 16.

5670 acres of land in Putney (35 percent) were enrolled in the Use Value Appraisal Program in 2001. 2762 acres were enrolled as forestry, 846 as agriculture, and 1963 as both forestry and agriculture. An additional 98 acres were enrolled as conservation land.

BUILDOUT FOR THE TOWN OF PUTNEY

INTRODUCTION

In order to help determine the potential for growth in the Town and what effect Putney's current zoning regulations would have on growth, a buildout analysis was conducted. A parcel-based buildout estimates the theoretical number of units that can be placed on a parcel by determining the maximum number of lots into which any parcel could be subdivided. This determination is done by taking into account only the minimum lot size as dictated by zoning. Once the theoretical maximum number of lots is determined, currently developed parcels are subtracted from this number. The result is the potential number of *new* lots that could be created, thereby giving an indication of growth potential.

It should be emphasized that a buildout is not a prediction of the development that will take place, but is instead a tool to determine what growth is possible based upon current zoning. As such, the buildout is simply a tool that provides some insight as to growth potential.

Coupled with population and housing projections, though, a buildout can be used as a tool to develop scenarios and how growth may take place in a town. One product of a buildout is a status of each parcel as to whether or not further development can take place. Using this information, one could place, say, ten year's worth of housing growth on parcels available for development, run the buildout again, and add additional houses.

A buildout analysis is also helpful in predicting the effect that zoning changes may have on growth potential. Increasing or reducing minimum lot size, or changing zoning district boundaries, is often seen by various members of the public as dramatically altering the development and growth potential of a Town. Say there is a proposal to change a zoning district boundary to reduce density in and therefore help to protect an environmentally sensitive area. A buildout could predict if such a change would have any significant impact on overall growth potential and therefore on landowners' ability to develop their land.

The buildout analysis was performed using the Community Build-Out Analysis software developed by the Addison County Regional Planning Commission and C. L. Davis and Associates. Basically, a parcel's acreage is used to determine the total potential lots into which a parcel could be subdivided, based upon the lot size minimum in the zoning regulations. The potential number of lots is reduced by one if the parcel is currently developed.

INPUTS TO THE BUILDOUT

The buildout software requires three key GIS data layers as inputs: zoning districts, parcel boundaries, and existing development.

Cartographic Technologies, Inc. (CTI), Brattleboro, Vt, developed GIS data on Putney's zoning districts. In the buildout software, minimum lot sizes for each zoning district were entered.

Parcel data also were developed by CTI, and information on parcel size came from area figures inherent in the GIS parcel data. These GIS acreages are not the official parcel acreage, but merely an estimate from the tax maps.

Information on existing development comes from E911 building point data (VGIS data layer ESITE). These data were edited by WRC using digital orthophotographs and parcel data to ensure that each building point was located on the proper parcel and fell on top of the building as shown on the orthophoto.

The buildout software allows for consideration of development constraints by adding additional GIS data layers. For this analysis, only data on conservation lands, where development was assumed to be specifically prohibited, was included.

RESULTS

The buildout results help to show overall potential growth trends for the Town, and should not be looked at on a parcel-by-parcel basis. A number of factors are not considered in the analysis, including land that would have to be allocated to access road rights-of-way, setback requirements, parcels less than the lot size minimum that are grandfathered, inaccurate parcel mapping, wetlands, floodplains, and so on. Overall, the impact of these assumptions is minimized when the results are viewed in a town-wide sense.

There are currently 1041 "units" (primary structures) in Putney. Considering existing development, current parcel configuration, and Putney's zoning regulations, 2589 acres, or 15 percent of the town, are currently "built out;" that is, in theory, no additional units can be built on these lands. For example, a 19 acre parcel in the Resource District, with one existing unit, is considered "built out" because, with a 10 acre minimum lot size, this parcel cannot be subdivided into two conforming lots.

Taking into account built out lands and conservation lands, 11464 acres are, in theory, available for additional development. Under Putney's current zoning regulations, 3486 new units could be placed on these lands. Map Six shows the buildout status of parcels in Putney. Table Three displays the buildout results for each zoning district.

Table Three – Buildout Results by Zoning District

Zoning District	Existing units	Potential new units	Total units at buildout	Percent of total	Acres subject to development	Current acreage built out
conservation	35	105	140	3	2455	506
hamlet	41	151	192	4	249	56
highway comm.	32	45	77	2	98	57
multi-use	13	33	46	1	74	16
resource	89	207	296	7	2500	655
rural residential	641	2695	3336	74	5831	1173
village	190	250	440	10	257	126
<i>Total</i>	<i>1041</i>	<i>3486</i>	<i>4527</i>		<i>11464</i>	<i>2589</i>

CONCLUSIONS

By themselves, the buildout results provide interesting but perhaps not overly useful information. When the results are broken down by zoning district, a bit more useful information is revealed. For example, in the Conservation District at buildout, the proportion of development in this District relative to the rest of the town is actually less than it is currently. We may loosely draw a conclusion that, while actual numbers of units will of course increase, the zoning regulations and existing conservation lands will, ignoring any other factors, produce a development pattern that mimics that of today and is line with the Town Plan goals of the lowest density development in the Conservation District.

It is recommended that the initial buildout results be used only as baseline numbers for further analysis, investigating minimum lot size changes or alterations of zoning district boundaries, for example. The results have been provided here for that purpose and, perhaps, to show that the zoning regulations themselves allow for additional growth, but only a very small percentage of that growth—market forces being ignored—would take place in the Conservation zone.

AGRICULTURAL RESOURCES

EXISTING CONDITIONS

Agricultural lands significantly contribute to Putney’s character, and the Town Plan advocates for the preservation of agricultural lands. According to the Natural Resources Conservation Service’s Common Land Use database, there are 1711 acres of agricultural land in Putney, covering 10 percent of the Town. These data were developed from 2000 orthophotos, and agricultural lands for this database refers to cropland, pasture or orchard. Most of these lands are found in two areas along the Connecticut River, along Westminster Road, and on West Hill.

Soils with an important farmland rating of ‘prime’ or ‘statewide’ (hereafter referred to as ‘important farmland soils’) total 3771 acres. These soils qualify as ‘prime agricultural soils’ under Vermont’s Act 250 land use law. Of significant note is that 78 percent of the Town’s agricultural lands are located on important farmland soils, so the vast majority of Putney’s agricultural lands are of good quality. Conversely, only 36 percent of the Town’s important farmland soils are currently used for agriculture.

Map Seven shows agricultural lands and important farmland soils in Putney. Table Four provides statistics on agricultural lands and important farmland soils by zoning district.

Table Four – Agricultural Resources

Zoning district	Agricultural land (acres)	Percent of district in Ag. land	Percent of Putney's Ag. Land in district	Important farmland soils (acres)
conservation	72	2	4	104
hamlet	30	8	2	153
highway comm.	23	12	1	55
multi-use	6	6	0	63
resource	567	15	33	717
rural residential	967	12	57	2314
village	43	8	3	253
	Total = 1708			Total = 3659

Over half (57 percent) of the Town’s agricultural lands are located in the Rural Residential zoning district, with an additional one-third in the Resource District. The percentage of the Rural Residential and Resource Districts that are in agricultural use, however, are nearly the same (13 and 15 percent, respectively).

Only 141 acres of the Town’s agricultural land (8%), under two separate landowners, is legally conserved. Protection of these lands is provided by a conservation easement through the Vermont Land Trust. Of these conserved agricultural lands, 79 acres are in the Rural Residential District.

CONCLUSIONS

Over half of Putney’s agricultural lands are not conserved and are located in the Rural Residential District. This District calls for a minimum lot size of two acres, and while the Town Plan acknowledges that the District does contain agricultural land, and encourages the maintenance of this use, preservation of agricultural lands is not the prime goal of the District. A proactive approach to maintaining agricultural lands in Putney, both in the Rural Residential District and elsewhere, is lacking.

When the zoning district boundaries were first drawn, a lack of mapped information on agricultural lands at the time may have resulted in the Rural Residential District included a majority of the agricultural lands. Or the passage of time, with the abandonment of marginal farmland that could have been located in the Resource or Conservation

Districts, may have resulted in shifting the proportion of agricultural lands to the Rural Residential District. Regardless, if a policy of the Town is to maintain agriculture, the proposed land use plan and zoning regulations do not seem to support this.

This issue may merit further investigation. Most all of the remaining agricultural land in Putney is on primary agricultural soils, so conservation of such agricultural lands will by default focus on viable acreage. The Town Plan lists a number of vehicles for preserving agricultural lands.

SEPTIC SUITABILITY

INTRODUCTION

The suitability of soil for on-site wastewater systems has an effect on the development potential of land. The physical characteristics of the soil alone may dictate whether or not a functioning septic system can be installed, but state regulations that are based in part on a soil's physical characteristics also legally affect what can be done.

On August 16, 2002, the State of Vermont adopted regulation changes affecting on-site wastewater systems. Some significant technical changes were made, including an increase in the maximum allowable slope in the leach-field area from 20% to 30% for lots created prior to June 14, 2002. These changes will affect the amount of developable land in Vermont towns and constitute a planning issue for local governments.

For years, many towns have tended to rely on septic suitability to do their land use control by default. Wastewater treatment technology is changing, and towns need to plan accordingly. Mapping septic suitability certainly does not give a clear picture of the absolute suitability of a site, but in a general planning context, such mapping can help to shed light on where slightly denser development can take place, or where development costs would be higher due to the need to engineer alternatives to traditional septic systems.

Key to mapping septic suitability is soil ratings developed by the Natural Resources Conservation Service (NRCS). In 1997, NRCS issued soil septic suitability ratings based on the Vermont regulations at that time. In response to the 2002 regulation changes, NRCS developed new ratings in 2003. Currently, these ratings do not take into account the 30% slope limit for parcels created prior to June 14, 2002. NRCS has noted the following kinds of soils that are now more likely to accommodate septic systems: floodplains; sloping, wet soils; and steep, moderately permeable soils. In some cases, however, the septic suitability of soils has decreased.

Soils data, by their nature, are somewhat generalized, and septic suitability maps do not provide a definitive picture of developable lands at the detailed parcel level. These maps can, however, help give planners a clearer idea of the overall effect that State on-site wastewater system regulation changes may have on septic suitability within Putney.

RESULTS

For Putney, three maps were produced, one showing 1997 septic suitability ratings; one showing 2003 septic suitability ratings; and one showing the changes between 1997 and 2003 septic suitability ratings. The 1997 and 2003 NRCS septic ratings use different nomenclature. WRC is using the 2003 nomenclature with all data to simplify map interpretation and comparison. The following table, based on recommendations by NRCS, shows the correlation between these two rating systems.

Table Five –1997 and 2003 Septic Rating Terminology

1997 NRCS Septic Ratings	2003 NRCS Septic Ratings
Group 1 and 2	Well Suited
Group 3 and 4	Moderately Suited
Group 5	Marginally Suited
Group 6	Not Suited
Group 7	Not Rated

The 2003 Septic Ratings for each zoning district are listed in Table Six. Map Eight shows the 2003 Septic Ratings in map form. The ratings are not entirely out of line with the planning goals of each zoning district. Forty percent of the Conservation District—the district whose goals are the least development-oriented—are rated as not suited, while only 16 percent of the Rural Residential District is rated as not suited.

Table Six – Percentage of Zoning District in Each Septic Suitability Class

Zoning district	<i>& of district well suited</i>	<i>& of district moderately suited</i>	<i>% of district marginally suited</i>	<i>% of district not suited</i>	<i>& of district not rated</i>
conservation	3	50	6	40	0
hamlet	32	50	4	13	0
highway comm.	32	57	1	10	0
multi-use	63	18	0	12	7
resource	7	56	14	23	0
rural residential	20	47	14	16	2
village	47	24	0	16	12

Map Nine highlights the changes in septic suitability ratings. On the whole, the changes septic suitability ratings for Putney are not dramatic. Two-thirds of the town experienced no change in suitability ratings, 22 percent of the town saw an increase in suitability, while 13 percent of the town saw a decrease. Overall, with a few exceptions, no one portion of town stands out as having a marked change in suitability.

Changes in suitability ratings in the Rural Residential District were nearly evenly balanced between increases (14%) and decreases (15%) in suitability. The Conservation

District saw the greatest change and greatest disparity, with 31 percent of the district increasing in septic suitability and only six percent decreasing in suitability. Close behind is the Resource District, with 30 percent of the District increasing in suitability and 14 percent decreasing in suitability.

While the increases in suitability in the Conservation and Resource Districts may at first seem startling, a closer look shows these changes to be of less concern. Nearly all the suitability increases in the Conservation District are from “marginally suited” to “moderately suited,” a change that is perhaps not greatly significant. And while most of the suitability increases in the Resource District are from “not suited” to “moderately suited”—a dramatic increase—these changes are principally in the Putney Great Meadows, where flood hazard area restrictions would limit development.

CONCLUSIONS

The septic suitability ratings for Putney do not seem to merit additional serious investigation. For the most part, the suitability of soils for on-site wastewater treatment is relatively in line with the town’s zoning regulations and planning goals. If changes in land use and zoning district boundaries are ever made, then certainly septic suitability ratings should be taken into account when drawing these boundaries. Issues involving the septic suitability ratings themselves, however, are not significant enough to trigger zoning district boundary changes.

DEVELOPMENT DENSITY

One Town Plan goal states “Map the density of existing settlement, to establish a baseline for evaluating the impact of additional growth on Town services, natural resources, and scenic areas. Compare with planned densities based on Land Use Classifications and current Zoning Districts.” An attempt was made to actually map the “density” of development, but the results seem fairly useless. Densities are very high for the village areas and very low elsewhere. Density mapping works best for either large areas or areas where the development patterns are a bit more consistent.

Along these lines, the distance from development, or “remoteness,” was mapped to try and highlight core undeveloped areas. This analysis included a large area surrounding Putney as well as the Town itself. The results of this process, displayed in Map Ten, show a number of core undeveloped areas, and also highlight the isolated nature of these areas. In addition, a number of these areas are along Putney’s borders, highlighting the need to look beyond the town line when considering conservation issues in planning, and the need to work with other towns to preserve open space.

The largest undeveloped area entirely within Westminster (Rocky Ridge) connects with the largest undeveloped area entirely within Putney (Bear Hill). This connection occurs at the town line, the “neck” of this hourglass-shaped area. Often, issues at town lines

tend to be overlooked, as one town may not view the area and the problems associated with it in context with the area in the adjacent town.

Another major undeveloped area—one that is regionally significant—lies along the western border of Putney at the Brookline town line, and extends north into Westminister and west into Brookline, Newfane, and Dummerston. Conservation activities by the Putney Mountain Association and other conservation organizations and federal agencies have helped to ensure land protection in this area.

There are several other smaller undeveloped areas and their connections across roads within the town that could benefit from a close look and potential conservation protection.

MAPS

- Map 1 – Zoning Districts**
- Map 2 – Estimated Building Construction Dates**
- Map 3 - Possible 30 Year Growth Scenario, Moderately Low Projection**
- Map 4 - Possible 30 Year Growth Scenario, Moderately High Projection**
- Map 5 - Conservation Lands**
- Map 6 – Buildout Status of Parcels**
- Map 7 – Agricultural Lands and Important Farmland Soils**
- Map 8 – 2003 Septic Suitability Ratings**
- Map 9 – Changes Between 1997 and 2003 Septic Suitability Ratings**
- Map 10 – Undeveloped Areas**