

**TOWN OF READING
FOREST FRAGMENTATION PROJECT**

FINAL REPORT



PREPARED FOR:

READING PLANNING COMMISSION
SOUTHERN WINDSOR COUNTY REGIONAL PLANNING COMMISSION

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**Reading Forest Fragmentation Project:
Final Report
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INTRODUCTION

The Vermont Natural Resources Council (VNRC) and Smart Growth Vermont (SGV), formerly Vermont Forum on Sprawl, are pleased to present this final report to the Reading Planning Commission and Southern Windsor County Regional Planning Commission on the Town of Reading Forest Fragmentation Project. In 2007, the Town of Reading received a municipal planning grant through the Vermont Department of Housing and Community Affairs to study forest fragmentation in Reading and research ways to avoid its negative consequences. To assist in the study, the Town of Reading hired VNRC and SGV to work in consultation with Vermont Department of Fish and Wildlife (Hereinafter Project Partners).

The Project Partners collected local input to inform the study and the final recommendation in this report. For example, residents and interested parties attended two separate public forums to provide input on the project. In addition, a survey was mailed to every landowner in the community to collect additional feedback regarding issues related to owning forestland in Reading. The Project Partners also met with the Reading Planning Commission on numerous occasions to help shape the study. Furthermore, VNRC and SGV convened a roundtable meeting at Vermont Technical College with experts across the state to collect input on strategies to avoid the negative consequences of forest fragmentation. These various meetings and public forums collectively informed the study.

This final report includes an overview of forest fragmentation and the consequences that result when forestland is divided into smaller and smaller pieces. The report also includes resource maps, the results of the public forums and the landowner survey, an evaluation of Reading's town plan and zoning bylaws, a matrix of regulatory and non-regulatory strategies for addressing forest fragmentation, and final recommendations for proposed plan and bylaw amendments and other initiatives.



WHAT IS FOREST FRAGMENTATION?

Forest fragmentation occurs when forestland is divided into disjointed parcels or converted to non-forest cover resulting in a matrix of land that may be less capable of supporting species diversity, viable tracts of working forests, and a host of ecosystem functions. The fragmentation of productive forestland through parcelization, the subdivision of forestland into smaller and smaller pieces and multiple ownerships, is a growing problem nationally and in Vermont.

The term 'parcelization' is used to describe changes in ownership patterns whereby large tracts are divided into smaller parcels. The act of parcelization is mostly a legal exercise where large tracts of land are divided into smaller ownerships or land holdings. The result of parcelization may simply be an increase in the number of people who own a specific parcel of land. However, when larger parcels are divided and sold or transferred into multiple parcels, typically through the process of subdivision, the result can be disjointed land ownership patterns that promote new housing and infrastructure development (roads, septic, utility lines, etc.). When this development occurs, it can fragment the landscape and negatively affect plant and animal species, wildlife habitat (called habitat fragmentation), and water quality. It can also affect the viability of large tracts of forestland to contribute to Vermont's rural economy. Forest fragmentation and habitat fragmentation are often the result of parcelization and its associated development.¹



EFFECTS OF PARCELIZATION AND FOREST FRAGMENTATION

Parcelization and forest fragmentation have numerous ramifications to the ecology and traditional economy of forestland in Vermont. According to U.S.D.A. Forest Service publication *Forests on the Edge: Housing Development on America's Private Forests*, parcelization and forest fragmentation can be associated with:

- **Decreases in native wildlife populations owing to decreased wildlife habitat quantity and quality, increased predation and mortality, and other consequences of human activity that change the relationships many wildlife species have with their environments.²**

For example, land clearing and road construction can result in the loss of evergreen/conifer trees used by deer for cover and protection during winter cold and snow. Land clearing and road construction can also disrupt wildlife travel corridors, which negatively affects species such as black bear.

- **Alterations in forest structure and function that can adversely affect ecological processes on which forests and forest dwellers depend, resulting in less biodiversity and more opportunities for invasions of nonnative species, insects, and diseases.³**

For example, housing development may result in road construction, conversion of forest resources, planting of nonnative species, and "woodscaping" - the practice of removing forest understory (vegetation under eight to ten feet in height), so as to create a park-like appearance. This can result in a loss of protective native habitat for ground-nesting birds and the introduction of potentially invasive, i.e. non-native, species of plants, insects and diseases.

- **Long-term modifications and reductions in water quality and aquatic diversity when forests can no longer regulate the movement of storm water across the landscape. This leads to changes in streamflows, increases in sediment, reshaped stream bottoms and banks. It adversely impacts water quality and aquatic species such as fish and mussels.⁴**

For example, water runoff from roofs, paved driveways, fertilized lawns and new roads channeled into culverts and new ditches can alter natural flow patterns and the composition of soil and water.

- **Decreases in timber production and active forest management when population densities increase.⁵**

For example, many landowners are unlikely to harvest timber in the immediate vicinity of their homes.

- **Changes in scenic quality and recreational opportunities owing to loss of open space, decreased parcel size, and fragmentation, all of which can degrade the recreational experience and lead to increased likelihood of land use conflicts.⁶**

For example, land clearing and home construction on ridgelines and hilltops can impair scenic resources. Old logging roads formerly used by the public for recreational pursuits may be converted to private driveways.

- **Shifts in price levels and economic benefits for forest-based products – including fewer options for timber management, recreation, and other uses whose economic benefits rely on large forested areas.⁷**

For example, fragmentation of large forest parcels in a single ownership to several smaller parcels in different ownerships can lead to access issues, higher maintenance costs, higher property taxes and reduced timber value available per entry. These factors can increase costs and reduce revenue, to the point that active forest management is no longer practical.

- **Decreases in ability of forests to sequester and store carbon as a way to mitigate greenhouse gas emissions and climate change, especially when parcelization is followed by land conversion.**

The Governor's Commission on Climate Change recently reported that reducing the conversion of our forestland to non-forest uses would be one of the most effective policies to reduce greenhouse gas emissions. In fact, the commission's goal of reducing the conversion of Vermont's forests by 50 percent by 2028 would have, perhaps, the highest measurable result of the 38 policies that were endorsed.

CAUSES OF PARCELIZATION

There are many causes of parcelization. Perhaps the greatest driver may simply be escalating property values and land prices in Vermont. As land valuation and development opportunities increase in Vermont, market conditions prompt an increased desire to subdivide and develop property for economic gain. Other factors that foster forest parcelization include:

- Population growth,
- Changing demographics,
- Shifts in cultural values regarding land management,
- Inadequate land-use planning and regulation, and
- Lack of planning within families to ensure consistent forestland ownership through multiple generations.

Increasing Land Prices

Over the past couple of decades, unprecedented real estate activity has occurred in Vermont and the Northern Forest Region. On a regional scale, between 1980 and 2005, approximately 23.8 million acres changed hands in the 26 million acre Northern Forest region.⁸ Of significant interest, nearly one-half (45%) of the land transactions that occurred during this 25-year period occurred in the last five years.⁹ While many of these transactions may have involved the same parcel of land, these transactions indicate a recent trend in real estate activity that has helped to drive an increase in land values in the region.

In Vermont, the real estate market has seen a noticeable increase in value in the last five or six years.¹⁰ According to the Office of Federal Housing Enterprise Oversight (OFHEO), Vermont homes recently experienced very strong appreciation, having on average climbed sixty-six percent in the last five years.¹¹ While the housing market may be starting to cool, Vermont in 2006 was still showing the greatest appreciation in New England, posting rates that were higher than New York State and the national average.¹² Since 1980, Vermont values on average appreciated 351%; --higher than the national average of 299%.¹³

Information from Vermont's property transfer tax data provides useful trend data for Vermont's real estate market. From 2001 to 2005, the average sale price for primary homes and condominiums rose 56.8 percent, from \$126,000 to \$185,000.¹⁴ Similarly, the median price of vacation homes and condominiums rose significantly from \$110,000 to 200,000, an increase of 81.8%.¹⁵ The increase in housing values was even more pronounced in Reading. During the same time period, the median price per acre of open land and forestland parcels of twenty-five acres or more rose 62%, from \$974 per acre in 2001 to \$1,580 in 2005. However, the median price per acre of open land and forestland parcels of between one and twenty-five acres experienced the highest growth rate, rising 117%, from \$4,505 per acre in 2001 to \$10,000 in 2005.¹⁶

According to Phil Dodd of the Vermont Property Owners Report, "the last figure, showing very strong demand for smaller parcels of land, suggests why owners and developers and speculators may have been tempted to subdivide and sell smaller parcels of Vermont land: this has been a very profitable business to be in." As highlighted by Dodd in a presentation to the Vermont Forest Roundtable, "all you need to do is buy a commodity (larger land parcels) that is going up in value at a rate of 62% every five years and then split it up and sell it as a commodity (smaller parcels) that is going up in price at the rate of 117% every five years."¹⁷

Increasing Property Taxes

Increasing land and property valuations, along with higher school and municipal spending, have led to rising property tax rates. In some areas of Vermont, property tax rates have increased significantly.¹⁸ This puts additional pressure on landowners to divide and sell a portion of their land. Not surprisingly, the National Woodland Owner Survey conducted by the U.S.D.A. Forest Service lists property taxes as the number one concern among landowners.¹⁹

The state offsets property taxes by providing income sensitive payments to lower income residents, but landowners that own large tracts of forested open space are not eligible for this payment.²⁰ Landowners who are land rich and cash poor feel the pressure of rising property taxes, unless they have taken measures to reduce their property tax burden by enrolling in Vermont's Use Value Appraisal (UVA) Program (commonly called "Current Use"). Approximately 38% of all eligible forestland is enrolled in the UVA Program.²¹ This is a significant accomplishment, yet it indicates that there is still a large percentage of forestland that remains vulnerable to property tax driven development pressures.

Population Growth and Land Use

Population growth and changing land use contribute to forestland parcelization. Between 1982 and 1992, the human population in Vermont grew by about 10 percent, but the amount of developed land increased by about 25 percent.²² Since population growth is occurring in mostly rural areas (defined as fewer than 2,500 people), forestland and important rural resource lands have experienced growth pressures that have led to parcelization.²³

Tracking parcelization rates in Vermont is tricky, but survey work that was repeated in the 1980s and 1990s demonstrates increasing parcelization in the state. For example, the number of non-industrial

private landowners in Vermont has increased from an estimated 61,900 in 1983, to approximately 80,000 in 1993. This corresponds with a decrease in the average size of a parcel of land.²⁴

Furthermore, a preliminary analysis of Grand List data from 2003 to 2007 indicates that 19,000 acres that had been in parcels larger than 25 acres in 2003 are now in smaller parcels.²⁵ In addition, there were 3,869 more parcels smaller than 25 acres in 2007 than there were in 2003.²⁶

Data specific to forestland shows in 1983, 19,000 individuals owned forest parcels 1-9 acres in size. By 1993, there were 40,900 owners of 1-9 acre parcels – an indication of increasing parcelization and landscape fragmentation.²⁷ This reflects a national trend of more people owning smaller pieces of forestland, with the current average parcel size of 24 acres projected to decrease to 17 acres in 2010.²⁸

In 1970, there were 165,063 housing units in Vermont.²⁹ In 2000, this number had increased to 294,382 units.³⁰ Between 2000 and 2005, years with high real estate appreciation rates, 17,673 building permits were issued in Vermont.³¹ While the number of building permits does not necessarily give an accurate picture of the degree to which parcelization has occurred on the land, it does highlight the level of housing growth that has occurred in Vermont.

The Forest Service estimates that by the year 2030, housing densities on private forests in Vermont are projected to increase between 5 and 40 percent across the majority of the watersheds, with the highest projected development expected to occur along the Connecticut River.³² This level of increased housing across the majority of the watersheds will contribute to a moderate to high level of parcelization of privately owned forestland.³³

Cultural and Demographic Shifts

The aging population of forestland owners also leads to parcelization. According to a recent report, 25 percent of all privately owned forestland in the United States is owned by people who are 65 or older.³⁴ While estate planning can provide ways to keep forestland intact among successive generations of forest owners, the will of a deceased landowner often divides the ownership of land into smaller parcels for purposes of bequeathing the land to multiple children. This leads to the parcelization of forestland unless the landowner has provided a way to keep the land intact.

Another driver of forest parcelization is urban dwellers' desire to either relocate or purchase second homes in rural settings where land is relatively cheap compared to urban real estate markets. This trend, labeled 'exurbanization', is defined as the migration of urban residents to rural environments.³⁵ Rather than buying rural land for traditional uses such as timber and agriculture, private residences are typically built a long distance from towns and services in order to maximize privacy and views. The demand for high-end homes in Vermont is contributing to the increasing parcelization of forestland, especially in resort areas.

FOREST FRAGMENTATION AND PARCELIZATION IN READING

The Town of Reading has not experienced the level of growth that other communities have in Vermont. Between 2000 and 2006, the number of new houses built in Reading has ranged between one and six a year.³⁶ The Reading Town Plan recognizes that subdivisions tend to be small, and growth incremental. Regional pressure from a housing crisis in the Upper Connecticut River Valley, however, could dramatically change development trends in Reading.³⁷ The U.S. Forest Service projects that housing densities will experience some of the highest increases in watersheds along the Connecticut River, with densities projected to increase on private forests across 20 to 40 percent of the watersheds by 2030.³⁸

Reading is fortunate in the sense that there is still time to educate the public about forest fragmentation and strategies that are available to minimize its effects. The following sections of the report provide an overview of the planning process associated with this project, and explain various planning options that are available for addressing forest fragmentation and its effects on working forests and ecosystem services such as wildlife habitat.

PUBLIC INPUT AND LANDOWNER OUTREACH

Project Partners conducted three meetings to collect input from residents, landowners, and interested parties. An initial public meeting was conducted in October of 2007 to assess priority community values pertaining to forestland in Reading. A second public meeting was conducted in April 2008 to collect input on a matrix of recommendations for reducing the effects of forest fragmentation. Finally, a roundtable meeting was convened at Vermont Technical College with experts from across the state to collect input on strategies to avoid the negative consequences of forest fragmentation.

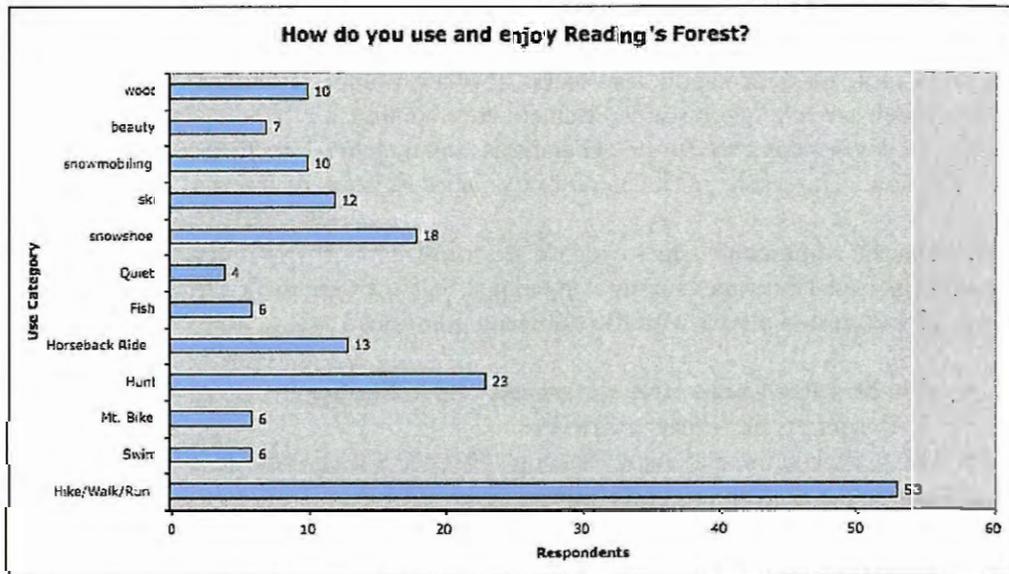
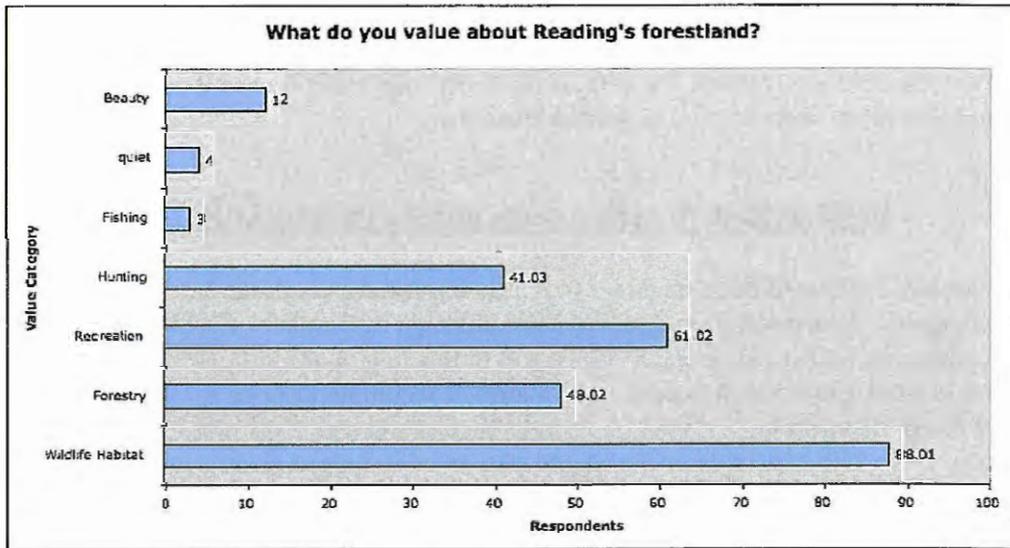
Approximately 50 participants attended the first public meeting. Participants broke into two groups to offer input. Results from the community values exercise highlight strong priorities in passive/non-motorized recreation, trail access, forestry/timber harvesting/sugaring, wildlife, ecosystem services (clean water, clean air, etc), hunting, aesthetics, potential conservation or development for future generations, and in general, the forest experience for personal reflection. The results of the community values exercise are listed in Appendix A.

Responses from the community values exercise are consistent with input that was collected from a comprehensive landowner survey in Reading. Surveys were mailed to 566 landowners and interested parties with the following questions:

- For how many years have you owned land in Reading?
- Is Reading your primary residence?
- How do you use and enjoy Reading's forests? Please indicate if there are places in particular that are important to you.
- What do you value about Reading's forestland? For example, do you value wildlife habitat, forestry, recreation, hunting, etc.?
- Would you like more information on ways to conserve forestland that you may own?

- Which of the following methods for conserving forestland do you support? Tighter land use regulations, local conservation efforts, better information on conservation opportunities, all of these, or nothing. Please list additional ideas you may have.

The graphs that follow highlight the results of 103 survey respondents. Based on the results of the survey, the average respondent has owned land in Reading for 19.7 years and 55.3% of the respondents indicated their primary residence is located in Reading. The complete results of the landowner survey are listed in Appendix B.



IDENTIFYING PRIORITY FOREST RESOURCES

A key goal of the community outreach was the identification of priority forest resources. The preparation of a priority forest resources map was based in large part on the “forest values” identified by community members through the landowner survey and October 2007 community forum, in addition to information gathered from resource inventories and evaluations of ecological functions (e.g., wildlife suitability, forest productivity) prepared by other regional and state entities (see Appendix C). The priority forest resources map identifies those areas of Reading that encompass a very wide variety of forest resources identified as important by community members, including wildlife habitat, recreation, forest management, landscape preservation and ecological services (e.g., water and air quality).

It is noteworthy that priority forest resources encompass most of the recently adopted Ridgeline Protection Overlay District (which largely comprised of large tracts of forested upland areas), as well as other areas of unfragmented forest land and limited, albeit important, areas that serve as corridors connecting the large tracts of less developed forest land. The priority forest resources map is intended to provide Reading residents, landowners and officials with an indication of how existing forest resources relate to land use and conservation policies, zoning district boundaries, road policies, and related local, state and federal programs and incentives designed to promote sustainable forest management. A map showing priority forest lands, as well as significant wildlife habitat and parcel boundaries, is on the following page. As with any map that highlights local resources, local officials should verify and periodically update boundaries and other features to accurately reflect conditions on the ground.

OPTIONS FOR MINIMIZING FOREST FRAGMENTATION AND PROTECTING WILDLIFE HABITAT

To assist the Planning Commission to understand the options available to limit forest fragmentation, the Project Partners prepared a matrix of alternative policies and programs that are available to Vermont municipalities and citizens. (see Appendix D) These included non-regulatory programs to provide landowners with incentive to conserve forestland and build public support and appreciation for forest resources and stewardship, and regulatory tools to guide development in a manner that limits fragmentation and development in sensitive areas. In addition, the Partners also reviewed the Town’s existing planning documents (town plan, zoning bylaws, road policies) and provided an extensive list of specific amendments that could effectively address forest fragmentation (see Appendix E). The matrix of alternatives and summary of the plan and bylaw review were presented to Town residents at a second public forum in April 2008. These gave local planners an understanding of the tools available, as how those tools could be applied in Reading.

In response to the list of options, the Planning Commission requested that the Project Partners to address several options in greater detail, including drafting specific revisions to the Town’s zoning bylaw and Plan, as well as clarifying certain issues of interest to the community.

- Provide information regarding how wildlife habitat is identified and regulated under Act 250, and provide a draft definition of “significant wildlife habitat to be used consistently in the bylaws.

TOWN OF READING, VT

Natural Features



- Draft revisions to the Town Plan to strengthen goals and policies related to wildlife habitat and forest fragmentation, and to improve consistency between the Plan and potential bylaw changes.
- Draft revisions to the zoning bylaws to strengthen standards to protect habitat and forest resources, minimize habitat fragmentation, promote ongoing forest management, require clustering and open space protection of forest resources, and improve the existing subdivision standards.
- Clarify the authority to, and options for, regulating land clearing under zoning bylaws.
- Explain the impacts of the Use Value Appraisal (Current Use) program on landowners and municipal taxpayers.

A response to each of these requests is provided below.

Defining Significant Wildlife Habitat

Most land use and development decisions in Vermont are made at the municipal level, despite the common misperception that state development regulations – most notably Act 250 – provides a high level of protection from inappropriate development. Act 250 regulates only approximately 40% of all development in the state. Therefore, the majority of development falls below the threshold for triggering Act 250 jurisdiction. This is especially true in small towns with modest rates of land are not subject to Act 250 review. development, such as reading, where most subdivisions a

Keeping this limitation in mind, the Reading Town Plan recognizes that the Vermont Department of Fish and Wildlife may consider protection of significant habitats as “necessary wildlife habitat” under criterion 8(a) of Act 250. Under Act 250, a permit will not be granted if it is demonstrated by an opponent of a project that a development or subdivision will destroy or significantly imperil necessary wildlife habitat or any endangered species.³⁹ This provision is tempered, however, by the requirement that an additional provision must be met in order to deny a permit.

To elaborate, a project’s opponents not only has the burden of showing that a project will destroy or significantly imperil habitat or an endangered species, but also has the burden of showing that either (1) the benefit to the public from the development will not outweigh the loss to the public from the destruction or imperilment of the habitat or species⁴⁰ (2) that all feasible and reasonable means of preventing or mitigating the imperilment by the applicant have not been or will not continue to be applied,⁴¹ or (3) that the applicant owns a reasonably acceptable alternative site to fulfill the development’s purposes.⁴² It follows that while Act 250 on its face provides a certain level of protection to habitat and endangered species from development, there is a burden on the opponent of a project, such as the Agency of Natural Resources, to possibly prove that the protection of an endangered species or habitat will outweigh the benefit to the public from the development.⁴³ This makes the protection of wildlife habitat vulnerable to a cost-benefit analysis.⁴⁴

For purposes of Act 250, necessary wildlife habitat is defined as “concentrated habitat that is definable and is demonstrated as being decisive to the survival of a species of wildlife at any period in its life, including breeding and migratory periods.”⁴⁵ The Vermont Supreme Court has clarified the definition of “necessary wildlife habitat” to mean habitat that is “decisive to the survival of the population of a particular species that depends upon the habitat,” and that it need not be decisive to

the survival of the entire species within the state.⁴⁶ Therefore, a project that will destroy or significantly imperil the habitat of a local population of a species should be prohibited, unless the opponent of the project is unable to meet the additional burden of proof for the denial of a permit.

Act 250 can be a positive check on the destruction of habitat, but it should be recognized that the Act is by no means a guarantee that habitat will be conserved due to the burden placed on an opponent to prove that alternative sites exist, or that the survival of species is more valuable than the development. To ensure that significant habitat is protected at the local level, the following definition of “significant wildlife habitat” should be included in Section 7.1 of the zoning bylaw, and should be used consistently elsewhere in the bylaw.

SIGNIFICANT WILDLIFE HABITAT. Those natural features that are essential for the survival and/or reproduction of the native wildlife of Reading. This shall include, but is not limited to, (1) deer winter habitat (i.e. deeryards); (2) habitat for rare, threatened and endangered species (state or federally listed); (3) concentrated black bear feeding habitat (bear-scarred beech and oak stands); (4) moose habitat; (5) wetlands that provide critical functions for wetland-dependent wildlife such as breeding/ nesting habitat for wading birds (e.g. bitterns, herons), waterfowl (e.g. ducks, geese) and otter and vernal pools; (6) wildlife travel corridors, characterized by undeveloped forested corridors, including forest cover reaching to road rights-of-way, which serve to link large tracts of unfragmented forest habitat; (7) large areas of contiguous, unfragmented forest that provide for a large number of species; (8) areas that provide an abundance of food and/or maternity sites; (9) significant natural communities such as grassland habitat, early successional habitat, old growth forest habitat, ledge habitat, high elevation habitat for nesting songbirds, riparian habitat; and (9) habitat identified by the Vermont Department of Fish and Wildlife as either significant wildlife habitat or necessary wildlife habitat in accordance with 10 V.S.A. Sec. 6086(a)(8)(A).

Strengthening the Town Plan & Zoning Bylaws

As explained in the technical review of the plan and bylaws, the Reading Town Plan contains an excellent overview of forest and wildlife habitat resources in Reading, and provides relatively strong support for protecting those resources through the zoning bylaws. Providing a foundation for strong zoning standards is critical due to recent changes to state enabling statutes. Under Vermont statute:

Any municipality that has adopted and has in effect a plan and has created a planning commission under this chapter may implement the plan by adopting, amending and enforcing any or all of the regulatory and nonregulatory tools provided for in this chapter. All such regulatory and nonregulatory tools shall be in conformance with the plan, shall be adopted for the purposes set forth in section 4302 of this title, and shall be in accord with the policies set forth therein.⁴⁷

As part of a comprehensive revision to 24 VSA Chapter 117 in 2004, the statute was changed to require that regulatory tools (e.g. zoning bylaws) be “in conformance with the Town Plan. Conformance was defined at that time to mean:

“a proposed implementation tool, including a bylaw or bylaw amendment that is in accord with the municipal plan in effect at the time of adoption, when the bylaw or bylaw amendment includes all the following:

- (A) *Makes progress toward attaining, or at least does not interfere with, the goals and policies contained in the municipal plan.*
- (B) *Provides for proposed future land uses, densities, and intensities of development contained in the municipal plan.*
- (C) *Carries out, as applicable, any specific proposals for community facilities, or other proposed actions contained in the municipal plan.*

To strengthen the plan and ensure conformity with the zoning bylaws (including draft changes presented in this report), draft revisions to the Natural Resource Goals and Policies (Chapter 2) and Land Use Goals and Policies (Chapter 7) are offered for consideration in Appendix F.

In addition to the Plan revisions, several revisions to the zoning bylaws are also provided for the Commission's consideration (see Appendix G). These changes are summarized as follows:

- 1) As discussed previously, a definition of "significant wildlife" habitat" to be included in Section 7.1 of the zoning bylaw. In conjunction with the adoption of this definition, several existing development standards that refer to "critical habitat," significant habitat," important habitat" are revised to consistently refer to "significant wildlife habitat."
- 2) Revisions to Section 4.14 of the zoning bylaws regarding subdivision review. Because the Town has opted to regulate the subdivision of land in conjunction with site plan review, rather than enacting subdivision regulations as authorized in state statute⁴⁸, it is suggested that targeted but substantive changes to subdivision standards be included to apply to lands identified on the priority forest resource map. This would, in effect, serve as a forestland and habitat overlay district with standards related to habitat protection, ongoing forest management, and forest fragmentation and clustering. It is also suggested that the Commission have the authority to require the designation of "development envelopes" on new parcels within which new development, including accessory structures, yard areas, etc. would be located. And, it is also recommended that approved subdivisions be required to record plats in the land record as a means of better tracking subdivision activity over time and ensuring ongoing enforcement of conditions of approval. Finally, a few technical corrections to improve clarity are also proposed.
- 3) Revisions to Section 5.3 Site Plan Review to include adding a standard related to pre-development site work and clearing. Such a standard is presently included in the Ridgeline Protection Overlay District and could prove valuable in other settings where forest habitat is found. It also is suggested that a new section be added under the district and use standards (Section 5.3.4) to address subdivisions (and other development subject to site plan review) in the RC-25 District to better reflect the purpose of the district regarding habitat protection and forest fragmentation.
- 4) Related to the changes to site plan review, revisions to the PUD provision (Section 5.4) of the bylaws are suggested to address clustering and the associated preservation of open space. Establishing a minimum percentage of a parcel that must be protected as open space is fairly common, although the suggested 70% open side is at the higher end of common practice in Vermont (though not unprecedented).
- 5) Several definitions, in addition to one for the term significant wildlife habitat, are also provided, as discussed in the technical review.

Review for Land Clearing Associated with Development

Another zoning revision that was discussed with the Planning Commission – whether the Town should regulate land clearing – requires separate consideration. This is because Vermont statute limits the ability of bylaws to regulate agricultural and silvicultural practices. In particular, a bylaw “shall not regulate accepted agricultural and silvicultural practices, including the construction of farm structures, as those practices are defined by the secretary of agriculture, food and markets or the commissioner of forests, parks, and recreation, respectively, under subsections 1021(f) and 1259(f) of Title 10 and section 4810 of Title 6.”⁴⁹

Furthermore, Vermont statute instructs that a municipality “may enact a bylaw that imposes forest management practices resulting in a change in a forest management plan for land enrolled in the use value appraisal program only to the extent that those changes are silviculturally sound, as determined by the commissioner of forests, parks, and recreation, and protect specific natural, conservation, aesthetic, or wildlife features in properly designated zoning districts.”⁵⁰ These changes also must be compatible with eligibility standards for enrolling in the use value appraisal program.

According to the Commissioner of Forests, Parks and Recreation these statutes prohibit the regulation of silvicultural practices, but allow the regulation of forest management standards. For example, a municipality may regulate logging road development through the creation of road design standards. Furthermore, a municipality can regulate clearcutting and forest management if the purpose of tree clearing is not related to silviculture, such as creating a view or facilitating land development. However, a municipality may not regulate clearcutting or forest management if the purpose of the management is for silvicultural purposes, i.e. to harvest and regenerate trees.

The Town of Reading could regulate land clearing or forest management if the intent of the clearing and tree cutting is not related to silvicultural practices. In fact, Reading already does this through the pre-application site development standard in the Ridgeline Protection Overlay District.

Pre-application Site Development. Forest management activities designed, as pre-development site preparation shall be reviewed by the Planning Commission to determine compliance with the standards set forth in this section. Such activities include, but are not limited to, road and driveway construction, excavation related to the upgrade and conversion of logging roads to development roads or driveways, clearing and/or grading for house-sites and septic systems, or related work. Where a landowner fails to submit predevelopment plans for review, the Board may direct the manner in which the site will be restored or re-vegetated prior to development and/or limit development to a portion of the property which best meets the standards of this district.

To make this standard applicable to all districts in Reading where forestland is present, this standard could be added to Section 5.3.3 General Standards.

Use Value Appraisal (UVA) Program Tax Considerations for Landowners & Local Tax Payers

The Use Value Appraisal (UVA) Program, commonly referred to as the Current Use Program, is one of Vermont's most important programs for keeping rural land intact. Landowners who enroll in the program enter into an agreement with the state to prohibit develop on their property as long as the land is enrolled in the program. In return, landowners pay their property taxes based upon a "use value," which is lower than fair market value. This financial incentive helps landowners manage their land for agriculture and forestry.

The innumerable benefits of this program flow not only to the landowner, but also to local communities, and to Vermont as a whole. Forestland and farms demand far fewer town services than residential subdivisions or commercial development. That keeps the costs of services for schools, roads, fire and police services and other town expenses lower. Many studies, including some performed by VNRC, indicate that increased development leads to higher tax rates. For every dollar of property tax collected from residential development, towns typically provide more than a dollar in services.⁵¹ Undeveloped land, on the other hand, requires very little in town services.⁵²

Current use also benefits Vermont by helping to maintain the characteristic rolling fields, forests and farmlands that define the Green Mountain State. This is reflected in the original goals of the Current Use Program, which are:

... to encourage and assist the maintenance of Vermont's productive agricultural and forest land; to encourage and assist in their conservation and preservation for future productive use and for the protection of natural ecological systems; to prevent the accelerated conversion of these lands to more intensive use by the pressure of property taxation at values incompatible with the productive capacity of the land; to achieve more equitable taxation for undeveloped lands; to encourage and assist in the preservation and enhancement of Vermont's scenic natural resources; and to enable the citizens of Vermont to plan its orderly growth in the face of increasing development pressures in the interests of the public health, safety and welfare.⁵³

In 2007, Reading had 73 parcels and 11,098 acres enrolled in the program. This means 43 percent of Reading is being managed for forestry and agriculture. Combined with state-owned land, almost 68 percent of the land in Reading is conserved and managed for forestry, agriculture, and wildlife.⁵⁴

A landowner that enrolls land in the program can expect to save a significant portion on their property tax bill. This is because land is taxed on its use value rather than fair market value. Land that is enrolled and managed for agriculture is assessed at a different use value than land that is managed for forestry. According to statutory direction, "use value appraisal means, with respect to land, the price per acre which the land would command if it were required to remain henceforth in agriculture or forest use."⁵⁵ The use values are calculated by capitalizing the income from agriculture or forestry.⁵⁶

Statistics from 2006 demonstrate that the average assessment and tax for land that was not enrolled in UVA in Reading was \$32.56 per acre based on an average assessed value of \$1,813 per acre.⁵⁷ The average assessment and tax for land that was enrolled in UVA was \$2.30 per acre as the assessment for land was decreased to an average value of \$129 per acre.⁵⁸ Therefore the average landowner who

enrolled in the UVA Program reduced their taxes by \$30.26 per acre by reducing the assessed value of their property by an average of \$1,684 per acre.

In Reading, landowners who enrolled in the UVA Program saved \$390,217 in taxes in 2007.⁵⁹ The total portion of municipal property taxes that landowners saved was \$76,917.⁶⁰ All towns in Vermont receive full reimbursement from the state for municipal property taxes that are lost due to enrollment in the UVA Program. The total reimbursement to municipalities in 2007 was \$9,729,392 for lost municipal property taxes.⁶¹

There is a common perception that other property taxpayers in town are subsidizing participants in the UVA Program. It is important to note that the taxes that would otherwise be paid on enrolled land are made up by all taxpayers in the state – not by property taxpayers in Reading.⁶² The following explanation from a recent report on the UVA Program explains the effects in property taxes of non-enrolled landowners in town.

[I]here is a great deal of confusion about the tax shift that occurs when land is enrolled in the Use Value Appraisal Program and taxed at a lower value. The taxes that would otherwise be paid on enrolled land are made up by all taxpayers in the state—not by property taxpayers in the host town.

- *School taxes are now state taxes, and the school property tax rate is determined by the state. A town that has more land in the Use Value Appraisal Program than another does not have a higher tax rate.*
- *the town receives full reimbursement for municipal property taxes lost.*

In combination, any property taxes not paid on land enrolled in the program are made up by all people and businesses that pay a variety of General Fund taxes and Education Fund taxes. Nevertheless, the perception persists among landowners, taxpayers and even some listers that landholders who enroll their land in the Use Value Appraisal Program are making property tax bills in town higher, and several towns reinforce this misconception by publishing incorrect information in their annual report.⁶³

The Reading town plan incorrectly instructs that the “State of Vermont reimburses communities for some of the tax revenue that is lost due to enrollment of land under the program.” The town plan should be amended to reflect that the State of Vermont reimburses communities for all of the tax revenue that is lost due to enrollment of land under the program.

CONCLUSION AND ACKNOWLEDGEMENTS

Forest fragmentation is an issue that requires attention at the local planning level. This report provides options for the Town of Reading to consider, including both regulatory and non-regulatory options for tackling forest fragmentation. The Planning Commission and interested parties should be sure to read the Appendix to get a full flavor of the options and suggested bylaw and ordinance amendments.

Planning for the forest fragmentation, like many land use issues, will continue to evolve over time and the Reading Planning Commission should continue to update policies and review the adequacy of appropriateness of the recommendations of this report.

Project Partners are grateful for the opportunity to have worked with the Reading Planning Commission, the Southern Windsor County Regional Planning Commission, Vermont Department of Fish & Wildlife, and the many dedicated residents and interested parties in the Town of Reading.

This report was made possible through several grants including a municipal planning grant from the Vermont Department of Housing and Community Affairs, and funding to support implementation of several priority actions of Vermont's Wildlife Action Plan with a grant from the Wildlife Conservation Society through its Wildlife Action Opportunities Fund. Support to establish the Wildlife Action Opportunities Fund was provided by the Doris Duke Charitable Foundation.

The pictures on the cover and page 1 were taken by Blake Gardner. The picture on page 3 was taken by Alex Maclean - Copyright Alex S. MacLean / Landslides. It represents a subdivision in Stowe, Vermont. The photo is published in the book "Above and Beyond."

ENDNOTES

- ¹ Forest fragmentation occurs when large, contiguous forests are divided into smaller blocks either by roads, clearing for agriculture, urbanization, or other human development. Cornell Lab of Ornithology at http://www.birds.cornell.edu/bfl/gen_instructions/fragmentation.html.
- ² Stein, Susan M.; McRoberts, Ronald E.; Alig, Ralph J.; Nelson, Mark D.; Theobald, David M.; Eley, Mike; Dechter, Mike; Carr, Mary. 2005. Forests on the edge; housing development on America's private forests. Gen. Tech. Rep. PNW-GTR-636. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station, at p. 11 citing Engels and Sexton 1994; Harris 1984; Theobald et al. 1997; Vogel 1989; Wear and Gries 2002a, 2002b.
- ³ Id. citing Ferreira and Laurence 1997, Meekings and McCarthy 2002.
- ⁴ Id. citing Booth and Henshaw 2001, Bryan 1972, Fisher et al. 2000, Jones and Holmes 1985, Paul and Meyer 2001.
- ⁵ Id. citing Gobster and Rickenbach 2004, Kline et al, 2004, Wear et al. 1999.
- ⁶ Id. citing Gobster and Rickenbach 2004, Patterson et al. 2003.
- ⁷ Id. citing Ellis et al., in press; Tyrvaïnen 1997; Tyrvaïnen and Vaananen 1998; Weeks 1990).
- ⁸ Hagan, J.M., L.C. Irland, and A.A. Whitman. 2005. Changing timberland ownership in the Northern Forest and implication for biodiversity. Manomet Center for Conservation Sciences, report #MCCS0FCP-2005-1, Brunswick, Maine, at p. iii.
- ⁹ Id. at p. 4.
- ¹⁰ Vermont's Housing Market – Trends and Perspectives, Handout by Phil Dodd for Forest Roundtable, Oct. 18, 2006. Available at <http://svr3.acornhost.com/~vnrorg/frt//presentations.htm>
- ¹¹ Id.
- ¹² Id. (In the second quarter of 2006, Vermont experienced 11.25% appreciation compared to the same time a year earlier).
- ¹³ Id.
- ¹⁴ Id.
- ¹⁵ Id.
- ¹⁶ Id.
- ¹⁷ Id.
- ¹⁸ Tom Mitchell, *Shifting Burden: School Spending Pinches State's Property Owners*, Rutland Herald, July 17, 2006, at A1, A6.
- ¹⁹ Brett J. Butler, Presentation at the Forest Roundtable (Sept. 18, 2006). Available at <http://svr3.acornhost.com/~vnrorg/frt//presentations.htm>
- ²⁰ Id. at A1.
- ²¹ As of the 2006 tax year, 38.4% of potentially eligible forestland was enrolled in the UVA Program. A total of 1,517,226 acres out of 3,948,100 acres were enrolled as of the 2006 tax year. Phone conversation with Bill Snow, Vermont Department of Property Valuation and Review.
- ²² Kim Royar, Vermont Fish and Wildlife Department. See also Vermont Fish and Wildlife Service, *Conserving Vermont's Natural Heritage: A Guide to Community-Based Planning for the Conservation of Vermont's Fish, Wildlife, and Biological Diversity*, (2004), at p. 18.
- ²³ Id. In 1960, Vermont's rural population was around 240,000; in 1990 it was around 382,000.
- ²⁴ Widmann, R.; Birch, T. 1988. Forest-land owners of Vermont-1983. Res. Bul. NE-102. Broomall, PA. USDA-FS, Northeastern Forest Experiment Sta. 89 p.
- ²⁵ Email correspondence with Deb Brighton.
- ²⁶ Id.

²⁷ Birch, T. 1996. Private forest-land owners of the Northern United States. 1994. Res. Bul. NE-136. Radnor, PA. USDA-FS, Northeastern Forest Experiment Sta. 293 p.

²⁸ LaPierre S. and Germain R.H. Forestland parcelization in the New York City watershed. 2005. Journal of Forestry 103 (3) : 139 - 145.

²⁹ Vermont Housing Data website. Available at <http://www.housingdata.org/profile/profileMainResult.php?submitted=stateProfile>

³⁰ Id.

³¹ Id. Statistics on housing units authorized by building permits include housing units issued in local permit-issuing jurisdictions by a building or zoning permit. Not all areas of the state require a building or zoning permit. The statistics only represent those areas that require a permit.

³² Stein, Susan M.; McRoberts, Ronald E.; Alig, Ralph J.; Nelson, Mark D.; Theobald, David M.; Eley, Mike; Dechter, Mike; Carr, Mary. 2005. Forests on the edge; housing development on America's private forests. Gen. Tech. Rep. PNW-GTR-636. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station, at pp. 8-9.

³³ Id.

³⁴ Crim, S, et al. Forest Fragmentation Extension Programming: A National Initiative., 2002. 8. Tyrell, M. and G. Dunning (2000). "Forestland Conversion, Fragmentation, and Parcelization." Yale Forest Forum Series 3(6): 6.

³⁵ Crim, S, et al. Forest Fragmentation Extension Programming: A National Initiative., 2002. 8. Egan, A. and A. E. Luloff (2000). "The exurbanization of America's forests- research in rural social science." Journal of Forestry 88(3): 26-30.

³⁶ Vermont Housing Data at <http://www.housingdata.org/index.php>.

³⁷ Reading Town Plan pg. 44-45.

³⁸ Stein et al., *supra* note 33.

³⁹ V.S.A. Section 6086(a)(8)[A].

⁴⁰ 10 V.S.A. Sec. 6086(a)(8)(A)(i). "The economic, social, cultural, recreational, or other benefit to the public from the development or subdivision will not outweigh the economic, environmental, or recreational loss to the public from the destruction or imperilment of the habitat or species." *Id.*

⁴¹ 10 V.S.A. Sec. 6086(a)(8)(A)(ii). "All feasible and reasonable means of preventing or lessening the destruction, diminution, or imperilment of the habitat or species have not been or will not continue to be applied." *Id.*

⁴² 10 V.S.A. Sec. 6086(a)(8)(A)(iii). "A reasonably acceptable alternative site is owned or controlled by the applicant which would allow the development or subdivision to fulfill its intended purpose." *Id.*

⁴³ See *In re Southview Associates*, 153 Vt. 171, 176 (1989). The Vermont Supreme Court outlines that a project's opponent has the burden of showing that the development will destroy or imperil necessary habitat and that the benefits of the development to the public will not outweigh the loss. *See id.*

⁴⁴ *See id.* According to the Vermont Supreme Court, TESA "will not foreclose all useful and beneficial development projects whose negative impact on the natural environment is slight." *Id.*

⁴⁵ 10 V.S.A. Sec. 6001(12).

⁴⁶ *In re Southview Associates*, *supra* note 17, at 176.

⁴⁷ 24 VSA Chapter 117 §4401

⁴⁸ 24 VSA Chapter 117 §4418.

⁴⁹ 24 V.S.A. § 4413(d). 24 V.S.A. § 4413(d).

⁵⁰ 24 V.S.A. § 4413(d)(3).

⁵¹ Vermont Department of Forests, Parks, and Recreation, Use Value Appraisal or Current Use for Forest Land Handout.

⁵² Id.

⁵³ 32 V.S.A. § 3751.

⁵⁴ This percentage may even be higher by factoring in land conserved through land trusts; however, much of this land is usually enrolled in the Use Value Appraisal Program.

⁵⁵ 32 V.S.A. § 3752.

⁵⁶ Brighton, Deb. Brynn, David. Rogers, Glenn, Sullivan, Martha. Weiner, Brendan. Review and Analysis of the Use Value Appraisal Program. October 2007. Page 29.

⁵⁷ Id. at 68.

⁵⁸ Id.

⁵⁹ Current Use Appraisal Program Participant Tax Savings - Tax Year 2007 available at <http://www.state.vt.us/tax/pvrannualreports.shtml>

⁶⁰ Id.

⁶¹ Id.

⁶² Brighton et al., *supra* note 51, at p. 24.

⁶³ Id.

Appendix A

October 2007 Community Values Public Forum
Meeting Summary

**October 2007 Public Forum
Community Values Priorities**

Break Out Group # 1: Priority Community Values

1. Passive/Non-Motorized Recreation ***** [8]
2. Motorized Recreation *[1]
3. Forestry/Timber Harvesting/Sugaring ***** [6]
4. Hunting **** [4]
5. Wildlife ***** [5]
6. Ecosystem Services (e.g., clean water, clean air) ***** [5]
7. Scenic Landscape (e.g., ridgelines) *** [3]
8. Personal Health/Quiet *** [3]
9. Tourist Economy

Break Out Group # 2: Priority Community Values

1. Tourism/Economic Impacts (e.g., recreation) ** [2]
2. Wildlife & Environmental Protection **** [4]
3. Water Quality/Quantity ***[3]
4. Aesthetic/Landscape **** [4]
5. Hunting/Fishing * [1]
6. Future Generations (potential conservation or development) ***** [5]
7. Forest Experience (person; reflection/spiritual) ***** [7]
8. Open Space * [1]
9. Forestry/Timber ** [2]
10. Trail Access **** [4]
11. Property Rights * [1]
12. Quality of Life/Lifestyle *** [3]
13. Privacy (Life, Liberty & Happiness) ** [2]

* Indicates one vote from group participant; each participant was given 3 votes and prohibited from voting for any one item more than once.

Appendix B

Reading 2007 Forest Resources
Landowner Survey

Appendix B

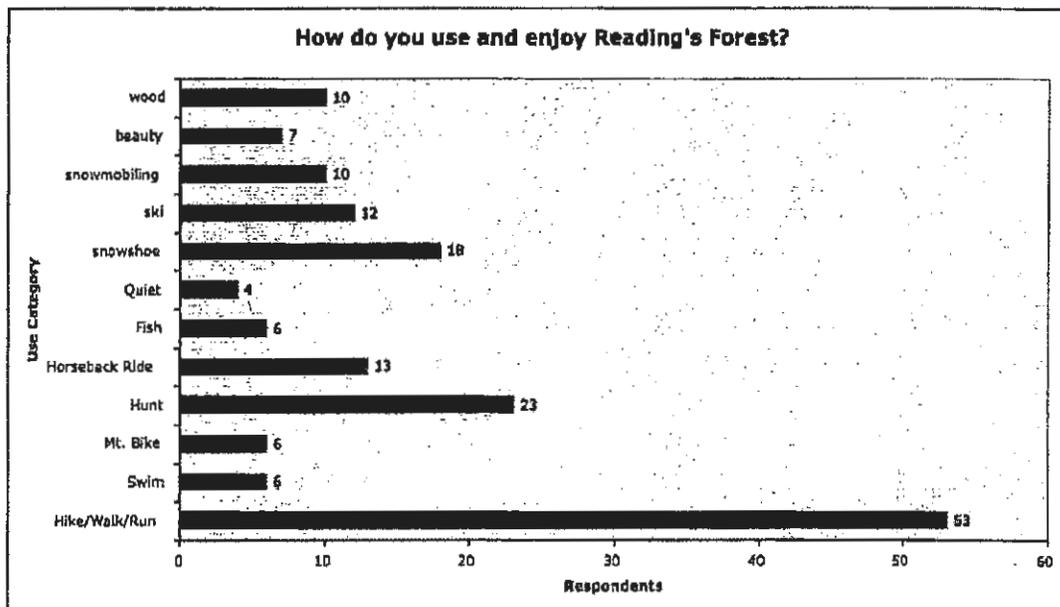
Landowner Survey Results Reading, Vermont

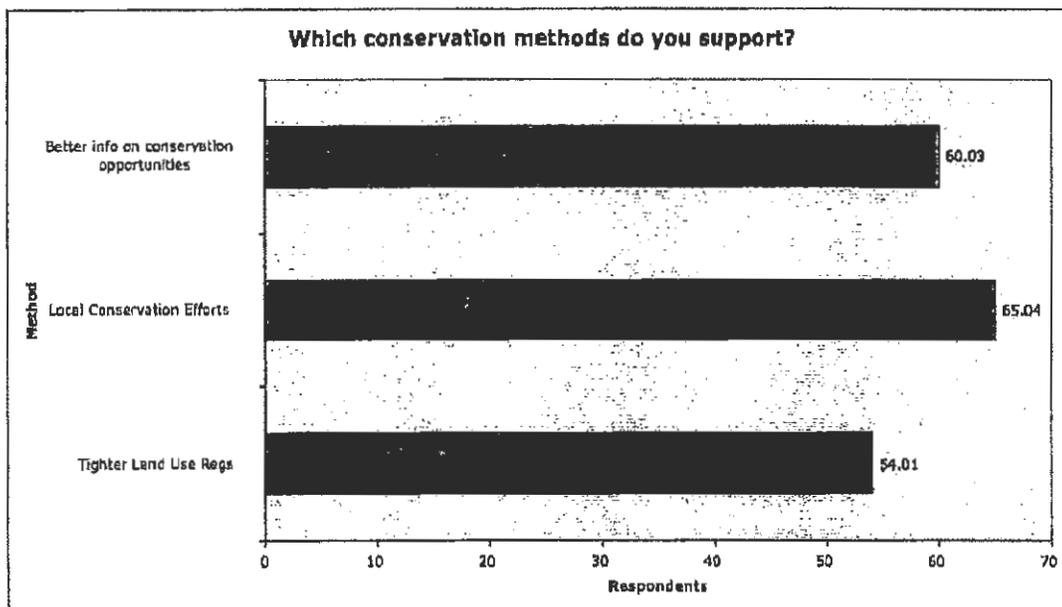
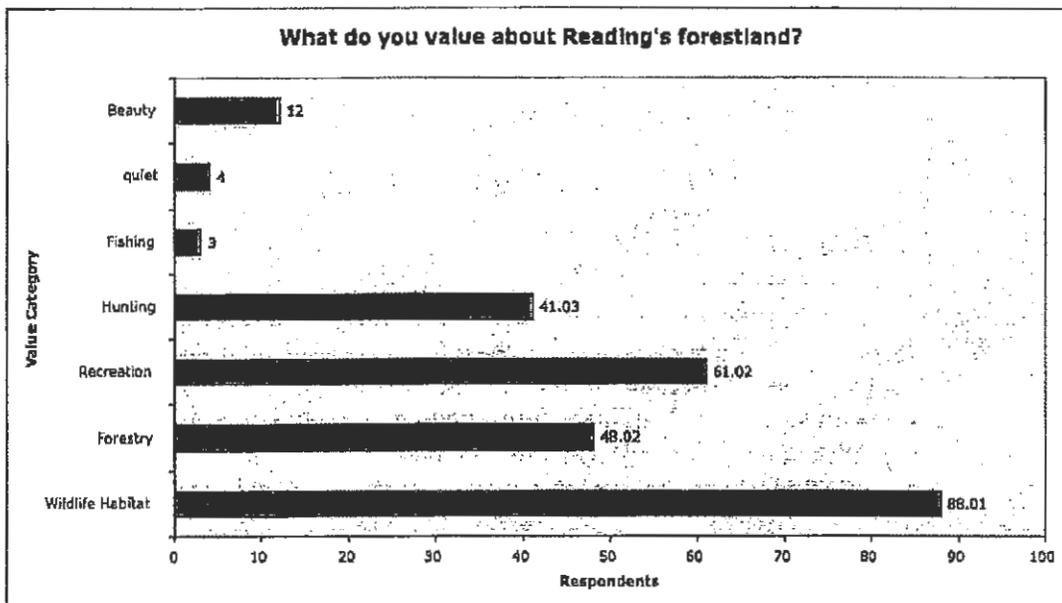
I. Original Survey Questions:

- For how many years have you owned land in Reading?
- Is Reading your primary residence?
- How do you use and enjoy Reading's forests? Please indicate if there are places in particular that are important to you.
- What do you value about Reading's forestland? For example, do you value wildlife habitat, forestry, recreation, hunting, etc.?
- Would you like more information on ways to conserve forestland that you may own?
- Which of the following methods for conserving forestland do you support? Tighter land use regulations, local conservation efforts, better information on conservation opportunities, all of these, or nothing. Please list additional ideas you may have.

II. Selected Questions, Graphed

These graphs represent the rough counts of 103 survey respondents from Reading landowners. The average respondent has owned their land for 19.7 years. 55.3% have their primary residence in Reading.





III. Interpreting the Data

In interpreting this data, please consider the following:

1. The first four answers for what someone values about Reading's forest may be inflated because many people answered 'all.' Such an answer was only applied to the four categories that were actually listed on the survey.

2. A few people ranked their answers but most did not. For now, a .01 instead of a 1 indicates where someone has ranked a choice as positive, but did not select it as their first choice.
3. It may be helpful to crunch some of the number to understand whether responses varied depending on whether a respondent's primary residence is in Reading.

IV. Written Comments

It would be nice to have services or volunteers to help those who want to conserve to get the efforts done.

Respect for any and all trails used by motorized sport vehicles during all seasons of the year

Preserving habitat for animals, maintaining scenic views

Should be brought up at town meeting so more will be aware

I support more education on land conservation opportunities, with the ability to manage the forest under the conservation easement.

1. Deter creation of looping roads - connectors; especially between Brown school house and kittridge pasture; connections will increase pressure to split parcels and develop; 2. Minimal maintenance on wilderness roads or roads with few residents; 3. Strongly discourage expansion of power into pristine areas or low pop density areas; 4. Regulate hours and days of operation of ATVs on roads and trails

You need more room for animals instead of backyards.

Accessibility is a huge problem

Legal surveys should be required of all new purchasers so mistakes like this don't happen again. One way to conserve forestland is to not have your new neighbor (without your permission) chop down all the trees between properties right up to the house)

This survey is a good thing. People that love the land will be made more aware of its value. I hope parents will encourage their older children to come on Oct 18.

I would support most methods used to conserve forestland. I would be careful of tighter land use regulations.

Additional scrutiny of Vermont's property tax situation. The excessively high taxes are forcing out agriculture and land uses for development growth. This will eventually ruin Vermont as we like it now.

5-10 acres per building is a good idea

More local forest workshops

We currently own ~1500 acres of land in Reading- farms, residential and forest and are very interested in conservation and tighter control of development

More tax incentive to conserve forestland WITHOUT losing the option for future residential housing

Not sure about TIGHTER land use regulations as not familiar with them. Do favor tight regulations. If more property lines were trimmed, fields and woods may be healthier without rows of trees and brush, some downed, maybe diseased. It would open up an area and let sun in.

Reduce taxes on land

Try to avoid STATE regulations (vs. local)

Making people aware of what is available for them to use

Limit development, maintain open space for recreational use, and keep a minimum on lot size for homes

Clean up old cars etc. in yards

Zoning is a band-aid, which cannot be equitably applied. Landowner education and incentives for conservation is preferable.

No more regulations, there are already too much; possible tax incentives?

Would like how to maintain our own land/forest to keep it healthy as possible and to keep it as habitat to local wildlife

Most land owners are familiar with proper land management, forestry, farming, etc. and do not need the town, state or government to tell them what they can do with it

You might consider cluster housing on development projects with common land

Walking and hiking paths- nature trails

Not tighter land use regulations; no more regulations, just education about conservation

We believe our current forest and wildlife management plan is a good conservation plan. We have no current plans to subdivide or develop our lands.

I understand the concerns. Property Owners who pay taxes do not need regulations where other people tell them what they may or may not do with their own property. Current use which helps conserve forest etc. We help pay their taxes and then some of them post their land; not right.

Existing clear cutting laws should be tightened and enforced. Hidden junkyards should be removed from forested areas; ATV traffic must be prohibited from managed forests and wildlife habitat

Less hunting more wildlife; more hunting restrictions

In general I grimace at the thought of more regulation on anything. Personally I think an information or media-blitz on conservation would be most beneficial long-term. If there was an underwriting fund from the state, that would seem ideal and something that should be exploited. See original for more. Another thought for conserving forest lands locally, may fall into having certain parcels deemed part of the state park system. Not only could local residents pick up some amenities, such as hiking trails, but could also get, possibly, some assistance with the tax rolls/land funding. Petting zoo/co-op farming might also support tourist dollars. Again, long term. Sorry for rambling, you asked.

I would LOVE to see the trails/forest area properly mapped and marked esp for horseback riding and day hikes. We seem to be losing access and that is key, along with areas to properly park to gain access; A mapped trail system would just e great! And I think it would get others to contribute to toverall cost.

On Nantucket a 2% transfer fee is collected on real estate transfers and those monies are used exclusively for the preservation of open space lands. We don't know if that concept would work in a town like Reading because it might create a disincentive to purchase real estate there. It would probably have to be on a regional or statewide basis. We are committed to maintaining the integrity of our parcel (50 acres). Outreach to realtors might be helpful. They all seem to want to point out a property's potential for subdivision. They maybe most complicit in slaying the goose that lays the golden egg. Good luck in your endeavor!

Help to the landowners who do own large tracts of land to make their land as valuable to them open as they would be if they were to develop them. For example my passion is hunting. So I feel fish and game should somehow support the landowners who keep their land open for hunting. I don't believe in more regulations, as regulations lead to more and more of them and at some point the words 'free country' begin to have no meaning.

While I encourage conservation, I am opposed to increased regulation. Different people have different views of how to enjoy the land and (within reason) should be able to enjoy the land their own way. We currently live in MA (South of Boston) and it is more and more difficult to find open space to hike and walk. While my daughter loves to ride horses, my son and I ride dirt bikes. I believe we are responsible and purchase quiet exhaust systems and USFS approved spark arrestors, but we are becoming persona non

grata throughout most forests. So while I want to preserve forest areas for all people, I want to ensure dirt bike/ATV riders are not excluded

Some type of tax break for those who don't post their land

I don't think people from out of state should be able to come and buy land up, then put it in land use. The local taxpayers have to make up the difference in tax dollars.

Another thought; eliminate current use, so that we who don't own much land don't have to help pay taxes for those who do! I own less than 1/4 acre and am retired on Social Security

Loosen restrictions on current use program, so smaller parcels can participate in conjunction with adjacent parcels.

Current Use lands should be open to the public (taxpayers) since taxpayers share in the payment of those taxes for CLU lands

DO AWAY with current use! It only benefits rich out of staters. Make ALL owners conserve their lands with NO kickbacks. We do more with 3 1/4 acres than some of these big landowners.

All the open UNPOSTED lands should be given even more of a tax break.

Drop current use and let them pay all of their taxes. I'm tired of paying part of their taxes and if they post their land I can't go on it, yet I pay part of their taxes.

NO new methods; stop telling me what to do with my trees; these are my trees not yours!!!

I cherish my view of what I think is called Rist Hill. Watching the forest turn color in fall, awaken in spring and smile in summer is a central aspect to my joy in Vermont.

I feel taxes are too high for people on fixed income. I worry about losing the place my family has owned so long.

239 acres is current use forestland, have a forester and plan for growth and cutting of all but 2 acres. The acreage is varied. The top of Keyes Mtn is ridge and rock caves. There are several good brooks and next to one the cellar hole of N. Keyes farm for which the mountain is named.

We have rebuilt the dam for our pond and as a result a pool immediately beside the road can be immediately flooded so that the fire department can fill their pumper truck when needed for a fire. The fire dept, chief and asst. chief are aware of all of this.

The section of Reading between Colby Pond and Time and Eternity has long been a quiet and serene place. Only in the last 10 years or so has it begun to grow a little. Since 1968 when our house was erected we have had visits from moose, skunks, hummingbirds, porcupine, and chipmunks. I would like to always have that much animal visitation in my 'neck of the woods.' Seclusion has its downside: complicates emergency response and may affect home security in a changing world. Good luck in this effort to protect our woodlands.

My family and myself have serious concerns about the proliferation of un-policed recreational vehicles on class 4 roads, class 3 roads and state lands. These include 3 wheeler, 4 wheelers, motorcycles and mud trucks as well as snowmobiles in the winter. The town of Reading has granted permission for these vehicles (4-wheelers) to use part of the Brown Schoolhouse Rd. The RATS ATV club has not lived up to its responsibility to police these vehicles and we find them many times out of the designated portion of the road traveling at excessive speeds. The other issue is how these vehicles are operated, excessive speed, blowing donuts, tearing up the road surface, etc. If they ARE doing this on a class 3 road what are they doing on state-owned land and class 4 roads? It only takes a few individuals to do a lot of damage - MOST 4-WHEELER OWNERS ARE RESPONSIBLE OPERATORS- but who is policing these irresponsible operators - certainly not RATS. The same applies to snowmobiles- the local club (Little Ascutney) and (Windsor County) are not policing, and VAST is out of the question. How much damage to our woodlands is being done by these machines and operators?

Glad that there is a discussion about our valuable asset in Reading!

Although we do need to have more residents it could mean building on current forestland

We also feel that land needs to be accessible for purchase by middle-income families. These regulations should not be made so that only the well-off or higher income families would benefit

Our land is not posted, no hunters. Horseback riders and others are free to access it. We have a use value stewardship plan.

All the open UNPOSTED lands should be given even more of a tax break.

I value all, but I feel I shouldn't have to pay the taxes for someone else who has more acres and can afford their own taxes. We pay their taxes but many times are restricted from their property to enjoy what I used to enjoy in this town.

Appendix C

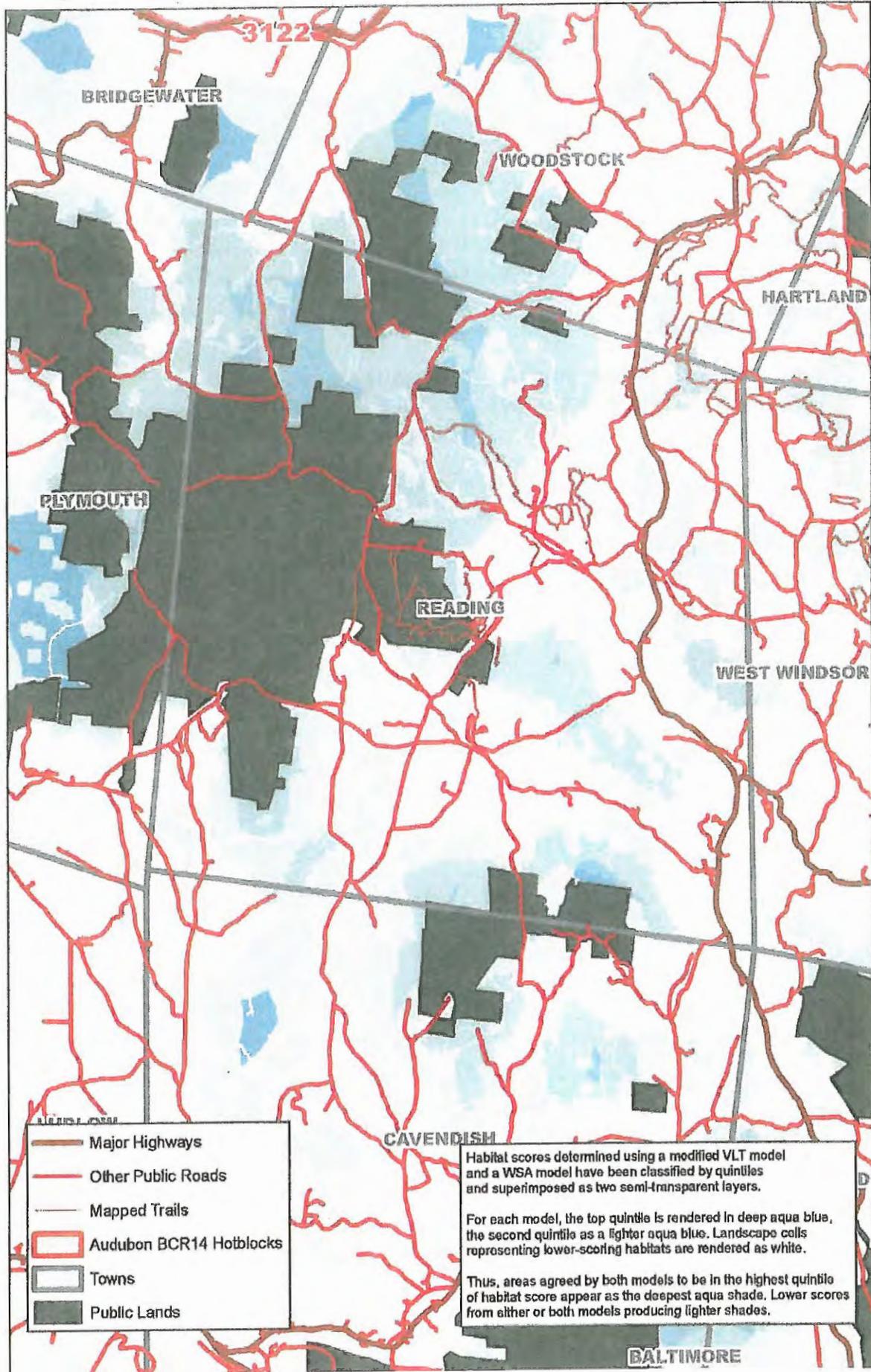
Resource Maps:

High Scoring Wildlife Habitat Map,
prepared by John Whitman for Forests, Wildlife, Communities Project (contact VNRC for
information)

VLT Forest Model Score,
prepared by Vermont Land Trust

Parcels Enrolled in Current Use Program,
prepared by Southern Windsor Regional Planning Commission

High Scoring Habitats Centered on Town of Reading



Town of Reading, VT Parcels Enrolled in Current Use Program



Parcels currently enrolled in Current Use Program



Appendix D

Forest Fragmentation Alternative Strategies Matrix

**Reading Forest Fragmentation Project
Key Alternatives Summary Matrix**

Regulatory Tool:	Description	Common Characteristics	Applicability
Conservation/Forest Reserve District	Conservation districts typically encompass areas defined by one or more natural features, limited existing development, limited road and utility access, and large parcels. Reading's RC-25 District may be defined as a Conservation District, although it lacks several of the common characteristics associated with such districts (e.g., residential uses are allowed as a permitted use; no resource protection standards apply).	<ul style="list-style-type: none"> ▪ Large Lot/Area Requirements (25+ ac.) which should be tied to resource management ▪ Low Density ▪ Limited Uses (may exclude year-round residential uses) ▪ Development/Resource Protection Standards (may require Board review process for all or most development activities). ▪ Easy to administer with trained volunteer board. 	High
Overlay District	Overlay districts are superimposed over one or more underlying conventional zoning districts in order to address areas of community interest that warrant special consideration, such as protection of a particular resource, including identified forest protection priority areas or wildlife resources. An overlay district is an effective way to impose resource protection standards on land that shares a common feature. Reading presently has two overlay districts: the Ridgeline District and Flood Hazard Area District.	<ul style="list-style-type: none"> ▪ Development/Resource Protection Standards (may require Board review process for all or most development activities). ▪ May alter use or dimensional standards from underlying zoning district. ▪ Easy to administer with trained volunteer board, though may require map interpretation. 	High
Fixed-Area Zoning	Zoning standards that include both minimum area requirements for subdivided lots and maximum density standards, which may be different from lot area requirement (e.g., may require one housing unit per 25 acres yet a minimum lot size of only one acre, thereby allowing subdivision for development that does not require excessive fragmentation of large parcels. Where used effectively, there is often a <i>maximum</i> lot size to prevent fragmentation.	<ul style="list-style-type: none"> ▪ Typically used in Conservation districts to conserve productive land (e.g., farm, forest land) or natural resources. ▪ May be confusing. ▪ Requires administrative capacity to ensure appropriate tracking. 	Medium (modified version)

**Reading Forest Fragmentation Project
Key Alternatives Summary Matrix (continued)**

Regulatory Tool:	Description	Common Characteristics	Applicability
Clustering (Planned Unit Developments)	Planned Unit Development (PUD) provisions authorize a local review board to “waive” or “modify” specific zoning standards (e.g., lot size, setbacks, etc.) for the purpose of achieving a better development design than would be possible under a strict application of the zoning standards. Common standards include smaller lots than otherwise allowed in district to facilitate clustering and the preservation of open space.	<ul style="list-style-type: none"> ▪ Typically authorize density bonuses. ▪ Usually encourage clustering and protection of open space (often min. open space standard). ▪ Typically discretionary, but statute allows municipality to mandate PUD review for certain projects or in specified districts. ▪ Density based on underlying zoning (plus density bonus) – may allow uses not otherwise allowed in district. ▪ Requires some administrative capacity 	High
Transfer of Development Rights	Authorizes communities to allow for development rights to be removed from a parcel in a district with resource values (sending parcel) to a parcel in an area that has been targeted for development (receiving parcel), thereby increasing the density. Though often cited as a useful conservation tool, its application in Vermont has been very limited for a variety of reasons, including the lack of market demand for density that exceeds the allowable zoning densities, the lack of receiving areas that have the capacity for significant increases of development density, and the administrative requirements for such a program. Some communities have created a modified TDR program by allowing non-contiguous PUDs, thereby allowing the transfer of development rights to one parcel in a rural (low density) district provided that another, non-contiguous parcel is maintained as open space.	<ul style="list-style-type: none"> ▪ The circumstances that lead to a successful TDR program include (1) a hot real estate market where the demand for density exceeds current zoning; (2) an adequate receiving area (with infrastructure to accommodate development and zoning densities significantly below market demand); and (3) defined sending areas. Reading – like most small Vermont towns – has ample sending area, but likely lacks a demand or capacity for density bonuses in designated “growth areas” to make a significant impact on conserving forest land (though a system could be developed fairly simply to provide TDRs as an option).. ▪ Does require some administrative capacity. 	Low

**Reading Forest Fragmentation Project
Key Alternatives Summary Matrix (continued)**

Regulatory Tool	Description	Common Characteristics	Applicability
Subdivision Regulations	<p>Subdivision regulations are typically used to guide settlement patterns and the extension of utilities and infrastructure, and increasingly to establish standards to protect natural and cultural resources. Many communities not only regulate the configuration of lots, but the extent of site disturbance and site improvements (including the location of structures) as well, and some communities have used subdivision regulations to regulate density in conjunction with zoning bylaws. Some communities require what is often referred to as "conservation subdivision design," in which the subdivider must document the steps taken to identify and protect specified primary and secondary resources on the parcel. Reading has a streamlined subdivision review process administered under the site plan review provision of the zoning bylaw.</p>	<ul style="list-style-type: none"> ▪ May include standards to protect identified resources, including wildlife habitat, steep slopes, etc., through lot layout and open space protection. ▪ Often used to guide development of subdivided lots through building envelopes and driveway and utility standards. ▪ May address issues associated with private road construction and the upgrade of class 4 roads. ▪ Can include specific standards for different zoning districts, including provisions to configure lots with consideration to current forest management/stand type, and to ensure ongoing forest management after subdivision. 	High
Site Development Standards	<p>Many of the tools described above are really different types of administrative procedures used to apply resource protection and site development standards to landowners within a town or particular area (e.g., districts) within a community. A zoning bylaw may also impose general development standards that might apply to specific activities (e.g., driveway construction) or development on particular land characteristics (e.g., steep slopes) regardless of their location in the Town.</p>	<ul style="list-style-type: none"> ▪ May be resistance to requiring a permit and/or review process that is not currently subject to such a review. ▪ Regulating certain site features (e.g. steep slopes) may be difficult unless the Town requires detailed site information as part of zoning permit application. 	Low (should have standards in conjunction with other processes)

**Reading Forest Fragmentation Project
Key Alternatives Summary Matrix (continued)**

Regulatory Tool	Description	Common Characteristics	Applicability
<p>Road and Trail Policies</p>	<p>Class 4 roads (public roads not maintained for year-round travel) typically provide access to areas of unfragmented forest. This appears to be the case in Reading. The adoption of policies to guide how such roads can be upgraded to serve development (i.e. new housing/subdivisions) can be an important means of managing fragmentation. Some communities have downgraded class 4 roads to "public trail" status, thereby removing the threat of upgrade. Others have treated class 4 roads differently than other roads in zoning (e.g., by requiring frontage on class 3 or higher for development purposes). Many communities have trail policies that articulate a vision for recreational trails and the level of development that should be allowed along town trails.</p>	<ul style="list-style-type: none"> ▪ Class 4 road policies should be based on an inventory of roads and consideration to how existing road policies relate to land use policies. ▪ Downgrading class 4 roads to trail status can be an effective way of avoiding future upgrade and related development, but many communities are reluctant to forfeit future transportation options. ▪ Zoning standards can differentiate between class 4 roads and those maintained for year-round travel. ▪ It is critical that the Selectboard, who have jurisdiction over local roads, are involved early in any discussion over road policy. 	<p>High</p>
<p>Ensure that Forest Products Industries are allowed in Community</p>	<p>Allowing sawmills and related processing facilities in appropriate zoning districts can support the local forest products industry. In addition, ensuring that the definition of forestry includes the on-site processing of forest products (e.g., with the use of portable sawmills) has become increasingly important to some loggers.</p>	<ul style="list-style-type: none"> • Sawmills, or "Forest Products Processing," is often allowed in Industrial Districts, and appropriate rural-residential districts (subject to performance standards to mitigate off-site impacts, such as excessive noise). • Forestry definitions are suitably broad to allow processing of timber harvesting on the site. 	<p>High</p>

**Reading Forest Fragmentation Project
Key Alternatives Summary Matrix (continued)**

Regulatory Tool	Description	Common Characteristics	Applicability
<p>Forest Practices</p>	<p>A municipality can require that logging operations comply with Acceptable Management Practices for Maintaining Water Quality. In addition, a municipality can require compliance with the Minimum Standards for Forest Management and Regeneration of the Use Value Appraisal Program for all lands that are enrolled in the Program. Beyond these standards, a municipality may enact a bylaw that imposes forest management practices resulting in a change in a forest management plan for land enrolled in the Use Value Appraisal Program only to the extent that those changes are silviculturally sound, as determined by the Commissioner of Forests, Parks, and Recreation, and protect specific natural, conservation, aesthetic, or wildlife features in properly designated zoning districts. Furthermore, a municipality can regulate clearcutting or land clearing if the purpose of the clearing is not related to silviculture, such as creating a view or facilitating land development. However, a municipality may not regulate clearcutting if the purpose of the management is for silvicultural purposes, i.e. to harvest and regenerate trees.</p>	<ul style="list-style-type: none"> • The regulation of forest practices mostly falls under the jurisdiction of the state. • Forestry standards or guidelines would typically be added to the zoning bylaw. • A municipality could feasibly impose forest management practices for shoreline protection areas or certain wildlife features, such as deer-wintering yards, in designated zoning districts. The Commissioner would need to review such a policy to ensure that any practices imposed on land enrolled in the UVA Program are silviculturally sound. • A municipality may regulate road development for logging through the creation of road design standards. • A community that would like to regulate liquidation harvesting that is related to land clearing for development could require that a conditional use permit be granted for such clearing. 	<p>Medium</p>

**Reading Forest Fragmentation Project
Key Alternatives Summary Matrix (continued)**

Non-Regulatory Tool	Description	Common Characteristics	Applicability
Education About the Use Value Appraisal (UVA) Program (Current Use Program)	The Use Value Appraisal program provides an incentive for private landowners to keep forestland productive and undeveloped. The program assesses forestland at its use value rather than fair market value, which lowers the property tax assessment for landowners who enroll. There are many misperceptions about the tax implications of enrolling land in the Use Value Appraisal program. For example, the State of Vermont reimburses communities for <u>all</u> of the tax revenue that is lost due to enrollment of land under the program.	<ul style="list-style-type: none"> ▪ The Town Plan could explain the benefits and characteristics of the program and clarify any misperceptions about the tax implications of the program. ▪ A landowner outreach campaign could be coordinated to encourage more landowners to enroll in the program. 	High
Education about Conservation Easements and Land Trusts	Conservation easements are important tools for landowners who want to conserve their land in perpetuity. They are voluntary agreements that allow landowners to restrict the type or amount of development on their property while retaining private ownership of the land. Many landowners receive a federal income tax deduction for the gift of a conservation easement. There may be other tax benefits as well, such as reduced property taxes, in some circumstances. Listers and appraisers should be made aware of the appraisal guidelines for conserved land.	<ul style="list-style-type: none"> • A land trust will hold the development rights while the landowner maintains ownership of the land. • The land may be transferred or sold, but the easement restricting development typically runs with the land. • Use of the land such for sustainable forestry or recreation is typically allowed, if not encouraged, through easements. 	High
Forest Management or Conservation Demonstration Projects	Excellent examples of forest management and stewardship could be showcased as an education opportunity for residents and landowners. For example, an area like Sylvan Acres could serve as a model for educational opportunities in the Town. In addition, a property that has been conserved through the Vermont Land Trust or a similar organization could serve as model for how easements are utilized.	<ul style="list-style-type: none"> • Woodland organizations such as Vermont Woodlands Association and Vermont Coverts: Woodlands for Wildlife offer educational opportunities for forestland stewardship. A project could be coordinated with either of these entities or others. 	High

**Reading Forest Fragmentation Project
Key Alternatives Summary Matrix (continued)**

Non-Regulatory Tool	Description	Common Characteristics	Applicability
Landowner Cooperatives to Manage and/or Conserve Land	Landowner cooperatives can be created so that landowners share in the costs of managing land and to foster conservation, stewardship, and market forest products. Landowners who coordinate activities through a cooperative or association can potentially apply for federal or state assistance, share in road and timber management improvements, develop comprehensive wildlife habitat conservation and forest management plans, and seek conservation easements or third party certification for sustainable forest management if desired.	<ul style="list-style-type: none"> • Existing forest landowner cooperatives such as Vermont Family Forests and the Orange County Headwaters Project serve as good models in the state. • A similar option is to create a community based Timberland Investment Management Organization to buy and manage forestland collectively. 	Medium
Education About Federal and State Assistance Programs	<p>There are state and federal programs that exist to help landowners with conservation or management projects. Information about these programs could be presented at a workshop in Reading or through the distribution of landowner tool kit or welcome kit for new landowners. There are too many state and federal programs to list here, but several include:</p> <ul style="list-style-type: none"> • Forest Legacy • Landowner Incentive Program • Wildlife Habitat Incentive Program 	<ul style="list-style-type: none"> • State and federal programs sometimes require matching funds. • In order to receive funding, projects must match certain criteria depending on the goals of the program. • Each program typically has a state coordinator that can help landowners apply to the program. 	High
Perform a Build-Out Model for Reading	Conducting a build-out analysis of potential development in Reading could assist planning efforts and reinforce the need for regulatory and non-regulatory tools to avoid forest fragmentation. Visual models are good tools for weighing management decisions that could impact forestland.	<ul style="list-style-type: none"> • A build-out assessment of rural/residential zoning districts is a fairly simple process using widely available GIS programs. 	High
Promote Local Forest Products	The forest products industry is an important part of Reading's local economy. Sawmills, wood or lumber processing, and local manufacturing and energy systems using forest resources from Reading are important ways to keep forestland productive for forestry in Reading. Residents should be educated about the importance of the local forest products industry.	<ul style="list-style-type: none"> • The buy local movement could be translated to forest products to encourage residents to use local materials. • Local architects and builders could be encouraged to use local materials. 	High

**Reading Forest Fragmentation Project
Key Alternatives Summary Matrix (continued)**

Non-Regulatory Tool	Description	Common Characteristics	Applicability
Education About Third Party Certification of Forestland	Third party certification allows landowners to receive an independent audit that certifies that land is being managed in a sustainable fashion. There is potential for landowners and forest products that are certified to receive a premium among buyers for certified materials. There are several certification programs including Forest Stewardship Council, Vermont Family Forests, Sustainable Forestry Initiative, and Tree Farm.	<ul style="list-style-type: none"> • Third party certification does cost landowners money to administer. • Markets are still emerging for certified products and the premium for engaging in the certification process is still being realized, although there is potential as carbon offset markets are developed to deal with climate change. 	Medium

Appendix E

Reading Town Plan & Zoning Bylaw Technical Review



To: Reading Planning Commission
From: Jamey Fidel & Brian Shupe
Date: February 8, 2008

Re: Review of Reading Town Plan & Zoning Bylaws

We are pleased to submit our technical review of the Reading Town Plan and Zoning Bylaws. Our review is intended to identify strengths and weaknesses of existing municipal policies and regulations with regard to how they address issues associated with forest fragmentation, and to provide the Planning Commission (PC) with considerations and options for amending existing policies and regulations.

Please note that our comments are presented as both observations related to a particular plan or bylaw provision and as considerations for how specific sections of those documents might be revised to better address issues associated with forest fragmentation. At this point, however, they are not necessarily intended as recommendations for immediate changes to the plan and bylaws, as some of the considerations might be either incompatible or redundant with other options presented. In addition, we would prefer to discuss the various options with the PC before making final recommendations to ensure that any subsequent policy changes best reflect the desires of Reading residents.

Our review is broken into three sections: (1) comments regarding the Reading Town Plan; (2) comments regarding the Zoning Bylaw; and (3) comments on other programs and policies. We have also provided a summary of the direct-mail survey results as Attachment A. We are currently developing a matrix of implementation tools to address forest fragmentation. We are collecting feedback on this matrix from participants in our Focus Group of the Forest Roundtable and will present the matrix to you before our next meeting. In addition, we have developed a series of maps outlining conservation priority areas for Reading and will present these at the next meeting with the PC.

We look forward to discussing these materials in person with the PC in the near future, and moving forward with developing specific implementation measures subsequent to that discussion.

I. Reading Town Plan

General Comments re: Goal & Policy Statements

- The PC should consider how it wants the Town Plan to be considered during local and state regulatory proceedings (especially Act 250). To have a strong bearing on the District Commission's deliberations relative to criterion 10 (conformance with the municipal and regional plans), a policy must be clear and unambiguous. With regard to goals and policies related to forest fragmentation and habitat protection, the PC may want to consider how each is worded relative to how it might be interpreted in a regulatory context and make revisions if the desire is for those policies to have the effect of a regulatory standard.

Chapter 2. Natural Areas, Scenic and Historic Resources

- In general, this chapter provides good language regarding fragile areas, wildlife habitat, and forest resources. The "Goals and Actions Steps" and "Policies" sections provide many sound tools for implementation. The tool of creating a wildlife overlay district could be added to the "Policies" section on page 19.
- Under "Development Capability and Septic Regulations" (page 7), the PC should update this section to reflect new septic rules adopted in 2007. The new rules do not allow installation of septic systems on 30% slopes or, in fact, any land over 20%. Under this same section, the Plan states that communities can "choose to adopt regulations that are more restrictive than the state's." The PC could consider adding an "Action Step" under Goal 1 (page 18) that adds provisions limiting development on steep slopes in the zoning and subdivision regulations.
- In order to protect the hydrological functions of forest land and water resources in the Town, the PC could add a section on "Groundwater" after the "Surface Waters" section on page 12. Under Goal #1 (page 18), the PC could add "groundwater resources", "surface waters", and "wetlands" to the list of resources to protect. The PC could add an "Action Step" that recommends mapping groundwater resources and creating a groundwater protection overlay as information on groundwater resources becomes available.
- Under "Significant Wildlife Habitat" (page 12), the plan states, the "Vermont Department of Fish and Wildlife (DFW) may consider protection of significant habitats as Necessary Wildlife Habitat under criterion 8(a) of Act 250." The PC could consider adopting stronger language for the protection of significant habitat at the local level. This would help support stronger policies in the zoning ordinance for protecting significant habitat that is not subject to Act 250. The PC could also review the explanation of significant wildlife habitat on page 12 and consider adding a formal definition of significant or critical wildlife habitat to the zoning ordinance.
- Maps that relate to significant wildlife habitat (referenced in Town Plan as Natural Resources Map on page 13) should be updated to incorporate the most current information that is available.

- Good attention to problems associated with fragmentation (page 14) and desired development patterns to avoid fragmentation of important resources (pages 14-15).
- PC could consider highlighting why Sylvan Acres is a well-managed forest and is an example of the type of management practices that should be encouraged by the Town (page 15). Sylvan Acres could serve as a model for educational opportunities in the Town.
- Under “Use Value Appraisal Program” (page 15), there are several statements that should be corrected. For example, the State of Vermont reimburses communities for all of the tax revenues that are lost due to enrollment of land under the program. A landowner does not pay for their neighbor to be enrolled in the program (less property tax revenue is received at the state level, but local tax rates are not impacted by the program). The Use Value Appraisal program provides an incentive for private landowners to keep both farmland and forestland productive. The first sentence of this section should reflect the dual purposes the program. A better way to explain the effect of the program is that it assesses forest and agricultural land at its use value rather than fair market value, which lowers the property tax assessment for landowners. The PC should consider strengthening this section to provide more information due to the importance of the program for keeping forestland intact. There is also a need to educate the public due to misperceptions among landowners concerning the tax implications of the program (see survey responses).
- Under “Recreation” (pages 16-17), the PC could clarify whether legal trails and class 4 (unmaintained) Town roads should be maintained for their recreational values, or could instead serve to facilitate access and frontage for development. If the PC wants to ensure that these recreational assets stay intact, it could clarify that legal trails and possibly class 4 (unmaintained) roads are not suitable for frontage for development.
- Under Goal #1 (page 18), the PC could consider updating the first “Action Step” to encourage the development of more comprehensive subdivision regulations.
- Under “Policies” (page 19), policy #5 states the Town “encourages the application of Acceptable Management Practices in all silvicultural projects within the Town. Sustainable and sensible logging practices are encouraged.” The PC could consider making the application of Acceptable Management Practices mandatory. State law limits the ability of municipalities to regulate forestry, but it does allow for mandatory compliance with AMPs, in addition to the forest management standards of the Use Value Appraisal program.
- Under “Policies” (page 19), policy #7 could be strengthened to encourage clustered development.

Chapter 3. Transportation

- Under “Road Network” (page 20), the plan refers to the recreational value of class 4 roads, but does not address whether there is pressure to upgrade such roads for development purposes. In addition, class 4 roads serve areas of un-fragmented forest which may be impacted by upgrades. There is a corresponding goal statement that the Town should retain ownership of class 4 roads for recreational purposes, but no statement of policy regarding development or upgrades of such roads. The PC might consider policies for maintaining the status, or downgrading certain class 4 roads to Trail status, and not allowing class 4 roads to be used to meet frontage requirements under zoning.

Chapter 4. Utilities and Facilities

- The section on electrical transmission lines could mention that the extension of electric utilities into un-serviced, forested areas can be a stimulus for fragmentation and residential development. Goals or policies discouraging or prohibiting such extension, or defining mitigating actions, would be appropriate.

Chapter 5. Energy

- The energy plan (page 33) notes that a relatively high percentage of Reading households heat with wood (22.1% compared with 9.4% for state), but does not identify firewood as a local source of alternative energy. Acknowledging this – and drafting related policies to maintain productive forest land as a local source for fuel – would complement natural resource and land use policies.

Chapter 7. Land Use

- Under the section on Reading’s rural economy, no mention is made of the forestry and forest products industries, despite 10% of private employers in Reading being engaged in forestry/logging.
- The future land use section should provide additional information regarding the land use (zoning) districts, especially how the districts relate to some of the plan statements (e.g., “land in the forest category should continue to be used primarily for recreation, conservation and sustainable logging” – page 45) and goals and policies. Presently, the plan does not provide a strong basis for the zoning, including a clear rationale for the RC-25 District, or for any other conservation district or standards. In addition, the plan should explain how zoning districts relate to the statement that “development on the remaining, more remote, land should be limited to the lowest density uses because of the steeper terrain, higher elevations, more fragile environments, wildlife habitat and limited access to roads and other services.”
- The Forest section could be revised to address issues of forest fragmentation and development, specifically issues related to road and utility extension and land subdivision.

- The Forest section (pages 45-46) may need to be revised since municipalities do not have the authority to regulate clearcutting, unless it relates to land clearing versus silvicultural activities. This section could be expanded to regulate clearcutting and liquidation logging operations that are related to development.
- Goal and Action Step #1 (page 47) could be revised to indicate that subdivision regulations have been adopted, but should be expanded and strengthened to protect natural resources, forest land, significant wildlife habitat, and Reading's scenic landscape and rural character.

Chapter 8. Implementation and Relationship to Local and Regional Plans

- This section could highlight that Reading's forest resources are part of a larger significant block of forest habitat, and that regional coordination on forest protection issues is important.

II. Reading Zoning Bylaws

Section 2.4.1 Residential/Conservation District (RC-25)

- The list of uses may introduce activities and development that are not conducive to the purpose of the district (e.g., restaurant, Inn). In addition, making single-family dwellings a conditional use, subject to appropriate natural resource standards, or limiting residential uses to seasonal camps, is also an option.
- The 25 acre minimum lot size may result in greater fragmentation than intended if large parcels are subdivided for development. Maintaining – or increasing – the maximum density of one dwelling per 25 acres, but reducing the minimum lot size to allow residential development on large tracts that keep a larger portion of the land in single ownership (e.g., 75 acre tract could be subdivided into two-one acre parcels and one 73 acre parcel), is an option. This could be accomplished through the district lot requirements or PUD review (see comments re: Section 5.4, below).
- Related to the minimum lot size, some communities have opted to require a 27 acre lot to ensure that new house-lots will remain eligible for enrollment in the state current use program after the two-acre homestead is excluded from the parcel.
- Consider whether private roads should be allowed within the district, or if all new lots should require lots with frontage on existing roads (and consider whether those roads should be class 1-3 roads).

Section 2.4.2 Rural Residential District (RR-10)

- As in the RC-25 District, maintaining the maximum density of one dwelling per 10 acres, but reducing the minimum lot size to one or two acres, would allow residential development on large tracts while keeping a larger portion of the land in single ownership

Section 2.4.3 Rural Residential District (RR-5)

- Consider allowing “Sawmills” of “Forest Products Industry” as a conditional use, to be defined more broadly than the definition of “Agriculture and Forestry Product Processing” by allowing the process of timber harvested primarily off-site. Appropriate performance standards could be developed to avoid or mitigate off-site impacts.

Section 2.4.7 Industrial Mining District (IM)

- Consider allowing “Sawmills” of “Forest Products Industry” as a conditional use, to be defined more broadly than the definition of “Agriculture and Forestry Product Processing” by allowing the process of timber harvested primarily off-site. Appropriate performance standards could be developed to avoid or mitigate off-site impacts.

Section 2.4.8 Ridgeline Protection Overlay District (RPO)

- This district should allow the Town to effectively avoid or mitigate the visual impact of development in upland areas. However, the district lacks natural resource protection standards, and the district boundaries appear to be drawn mostly to address site visibility. The PC could add resource protection standards (e.g., critical wildlife habitat). This could be done as a standalone revision, or in conjunction with the following options.
- Consider including subdivision standards that could mandate clustering through the PUD provisions, and otherwise include subdivision design criteria related to forest fragmentation, habitat protection, and ongoing forest management.
- As noted, district boundaries appear to encompass land based upon visual sensitivity. The boundaries – and purpose of the district – could be expanded to function as a forest resource protection overlay district, to include areas identified as priority forest protection areas. An expansion of the district could take the form of (1) a larger district with wider variety of resource protection standards; (2) an expansion of the district to include two designated areas (i.e. subdistricts, in which resource protection standards would apply within both, while the ridgeline visual resource protection standards would only apply within the existing RPO District; or (3) create a new overlay district to address priority forest resource lands.
- Consider clarifying in the “Exemptions” section that forestry is not exempt if it is solely carried out to clear land for subdivision development. This could help accomplish the goal in the town plan (pages 45-46) to create some oversight for the practice of clearcutting.

Article 3 - General Regulations

- Consider adding a new section titled “Land Clearing.” This section could require review for land clearing associated with development. Silvicultural activities would need to be exempt, but clearing associated with housing or infrastructure development could be regulated to reduce or mitigate aesthetic and/or resource impacts. The PC could also

address this issue under Section 5.1.2 and clarify that while accepted management practices for (AMPs) for silviculture are exempt from the permitting process, land clearing for development would require a permit.

Section 3.1 Access and Frontage Requirements

- Consider revising subsection 1 to require frontage on a class 1-3 road, rather than all public roads. Consider clarifying that town trails cannot serve as frontage.
- Consider referencing compliance with Section 4.14 Subdivision of Land, including all applicable siting and resource protection standards, as a requirement of granting non-frontage access.
- Either in this section, or under Section 2.4.1 RC-25 District, including design standards for driveways that might limit impacts to steep slopes or limit the length of driveways to avoid encroachment into un-fragmented forest.

Section 3.5 Lot Requirements

- Consider clarifying that forestry and agriculture are principle uses that are allowed to occur on parcels in which other principle uses (e.g., dwelling units) are allowed, to avoid confusion. This is likely common practice, and the section refers to principle structures, so this may be a more important issue associated with agriculture.

Section 3.10 Surface Waters and Wetlands

- Consider increasing the stream buffer within certain districts (e.g., RC-25, RPO, above certain elevations, or on specified streams) to offer higher protection for headwaters or protect wildlife travel corridors.

Article 4 Specific Use Standards

- Consider including performance standards for expanded forest products processing or sawmill use, if appropriate.

Section 4.14 Subdivision Regulations

- Consider eliminating (or expanding) this section and adopting more comprehensive subdivision regulations as part a set of unified development regulations. Such expansion would be beneficial in that it would be easier to establish a phased review process including an initial “sketch plan review” meeting, include administrative procedures for plat filing that would help with long term enforcement of conditions of approval (as well as with municipal property records), and include more comprehensive review criteria and resource protection standards.

- The application submission requirements may be too limited to provide the PC with the full range of information needed to conduct a complete review, especially where an application involves a parcel with sensitive natural features.
- Consider authorizing the PC -- either in this section or under Section 5.3 which governs the administration of the review process --to (1) require additional materials or studies related to the potential impact on identified resources (e.g. critical wildlife habitat); (2) consult with appropriate state officials (e.g. DF&W) to consider potential impacts; and (3) require the applicant to fund additional studies or impact assessment, in accordance with subsection 6.4(2).
- Consider revisions to make the terms “critical wildlife habitat” and “important wildlife habitat” consistent, and define the term.
- Consider strengthening habitat protection standards to avoid the division of, and authorize buffers around, identified resources (e.g., critical wildlife habitat).
- Consider adding protection standards to avoid the undue fragmentation of forest resources and productive forest land.
- Consider clarifying that the standards under Section 5.13 are also applicable to subdivision review.
- Consider including standards for the subdivision of productive forest land and define the term), or priority forest land (if mapped), to include review of forest management plan – not to regulate management practices, but to ensure that the subdivision will not unduly limit the opportunity for ongoing management through the fragmentation of management units, limitations on access, or creation of conflicts between management activities and residential development.
- Consider including district standards that address the considerations specific to the RC-25, possibly the RC-10, and RPO Districts, as well as other appropriate districts. Such standards could require review under Section 5.4 PUD within certain areas to require clustering and open space protection.
- Consider specifying that development envelopes may be required to ensure that the development of the subdivided parcel does not impact identified resources.

Section 5.2 Conditional Use Review

- Consider adopting, by reference, applicable subdivision or site plan review criteria in the event that residential uses in the RC-25 District are made conditional uses (or include those standards under the district requirement, as is the case with the RPO District.

Section 5.3 Site Plan Review

- Consider including additional district standards for the RC-25 (and possibly RR-10) District focused more on maintaining large tracts of productive forest, minimizing fragmentation of forest resources, protection of water quality etc. This may be done in conjunction with revisions to Section 4.14.

Section 5.4 Planned Unit Developments (PUDs)

- Consider whether review under the PUD provision should be mandatory, possibly with a requirement that productive forest land be subdivided that maintains the maximum amount of productive or sensitive land in single ownership subject to a management plan, and that proposed residential lots not exceed a maximum size; and/or basing density calculations on the developable portion of the lot, to exclude identified resources (e.g., wetland, slopes in excess of 25%).
- Consider including specific district standards, either here or by cross reference.

Section 7.1 Definitions

- Consider revising definition of Forestry Use by allowing use of portable sawmills for short term processing.
- Consider revising definition of “Agriculture and Forestry Product Processing” as follows: *The processing of agricultural or forestry products which are grown primarily on the site for sale or consumption by others.*
- Include a definition for “road” and “driveway.”
- Include a definition for “Planned Unit Development.”
- In the event that the PC wants to limit residential uses in the RC-25 District, or make year-round dwellings a conditional use, consider revising the definition of “Camp (Seasonal)” to make administration and enforcement of the regulations more practical.
- Consider creating a definition of “Critical Wildlife Habitat” (a term referenced in Section 4.14 Subdivision Regulations).

III. Other Policies/Programs

We are not aware of other municipal policies or programs (e.g., municipal wastewater allocation policies, capital budget and program) that would have a bearing on issues associated with forest fragmentation. This is typical of most rural Vermont communities, and therefore not a surprise. We did, however, review what we understand to be the extent of the Town’s class four road policies which relates only to the recreational use of those roads by ATVs. With nearly a dozen miles of class four roads, the Town should consider whether development policies should differ on land served by these roads, the process for allowing for their upgrade, and whether certain sections should be downgraded to trail status.

Appendix F

Town Plan Draft Revisions (Natural Resource & Land Use Goals & Policies)

Natural Resource Goals and Action Steps (Goals are numbered, Action Steps are indicated by an arrow)

1. Protect rare/irreplaceable natural areas from development. These include unique forests or ecosystems, rare or endangered species habitat, deer wintering areas, bear and moose habitat, streams and shoreland buffer areas, geologic features, high elevation areas (see Table 2.1).
 - ~~Revise Reading's zoning bylaws where necessary or appropriate, and consider the use of subdivision regulations, to define and protect significant wildlife habitat.~~
 - Help public and private entities design development or resource management plans that will protect or enhance important natural and cultural resources.
 - Identify parcels that are of particular importance to the Town and work with land trusts to preserve these lands.
 - Initiate the development of educational programs in the local school system to teach Reading's children the benefits of and threats to important local resources.
 - Protect and conserve rare and endangered plants, animals, and habitats by encouraging landowners to develop a protection plan in cooperation with the Town and the Vermont Natural Heritage Program.
 - Perform regular updates to the Inventory of Natural and Cultural Resources.
2. Preserve and protect important historic, scenic and cultural features whenever practicable. These include stone walls, cellar holes, cemeteries, historic buildings and districts, and archaeological sites.
 - Work with the Regional Planning Commission, the Vermont Department of Historic Preservation and the Reading Historical Society to assess the possibility of including additional buildings, structures, or districts on the State or Federal Register of Historic Places.
 - Investigate the possibility of using the Vermont Scenic Byways program to promote and/or protect outstanding scenic roads in Reading.
3. Protect scenic views wherever possible.
 - Amend zoning bylaws to maintain historically significant scenic views to the fullest extent possible;
 - Continue to administer and enforce the Ridgeline Protection Overlay District to avoid or mitigate the visual impacts of development on scenic ridgelines and upland areas.
4. Keep active agricultural and silvicultural lands productive, ecologically healthy, and economically viable.
5. Protect streams from pollution and erosion caused by development or road maintenance.
6. Provide recreational opportunities consistent with the character of the Town, such as:
 - Hunting, trapping and fishing;

- hiking;
- wildlife viewing and nature study;
- cycling, horseback riding, skiing, snowshoeing, and snowmobiling.

Natural Resource Policies

1. Rare and irreplaceable natural areas within the town shall be protected from development activities and uses that threaten their biological integrity and ecological value. Development in and around these areas may be limited in scope and intensity; soil erosion and pollution of water resources must be controlled in these areas.
2. Private development, along with construction and maintenance of the public infrastructure, shall be designed to preserve important historic and cultural features in their historic state and to enhance the public's access and appreciation of these resources where appropriate.
3. Scenic views, especially from public roads and trails, are important social and economic resources to the Town. Development within these viewsheds, including on ridgelines and upland areas shall, shall occur in a manner that does not diminish their scenic value. Innovative development design, including appropriate placement of structures and adequate visual screening may be required to protect these scenic views.
4. The Town shall encourage and support the use of Vermont's Accepted Agricultural Practices in order to maintain productive and economically viable agricultural land while protecting environmental quality and natural resources.
5. The Town recognizes the importance of healthy native forest ecosystems to the forestry economy, and therefore encourages the application of Acceptable Management Practices in all silvicultural projects within the Town. Sustainable and sensible logging practices are encouraged.
6. The Town should encourage landowners to conserve and properly manage woodlands utilizing education and awareness of State resources or through the assistance of a Town sponsored Conservation Commission.
7. Development and land subdivision shall be configured to minimize the fragmentation of priority forestlands, as depicted on Map # , and to avoid undue adverse impact on significant wildlife habitat.
- ~~7.8.~~ Where development of forested land threatens ~~critical~~ significant -wildlife habitat and other biologically sensitive areas, the Town shall encourage, or specify as necessary, the placement of structures toward the periphery of the property, leaving interior areas contiguous and undisturbed.
- ~~8.9.~~ The Town shall work with state and federal agencies, whenever possible, to develop and implement strategies to protect important natural, scenic and historic resources from detrimental effects of development.
- ~~9.10.~~ The Town shall give careful consideration to the fragile and scenic nature of steep slopes (over 25%) and ridgelines when determining what kinds of development are appropriate in these sensitive areas.
- ~~10.~~ Winter recreational trail locations should consider deer wintering areas, fragile habitats and the guidelines and policies of local and State agencies.

Land Use Goals and Action Steps (Goals are numbered, Action Steps are indicated by an arrow)

1. Protect and enhance Reading's scenic landscape and rural character.
 - ~~Revise zoning bylaws where necessary and consider the use of subdivision regulations to~~ Require that the subdivision of land and associated residential development be configured in a manner that preserves scenic resources, meadowland and fragile features and be clustered such that the majority of development activity is located on the least sensitive portion of the land.
 - ~~Consider revising the Reading zoning bylaw to include standards to avoid or minimize the~~ fragmentation of priority forest lands to maintain such areas for wildlife habitat, maintenance of water and air quality, dispersed recreation and sustainable forest management.
 - Develop landscaping and site design standards in the zoning bylaw for commercial and industrial development.
 - Consider the creation of agricultural zones as a part of the zoning bylaw. Areas that could be so designated include the Bailey's Mills area, Reading Farms, Springbrook Farm, the Jenne Farm, Newhall Farm, Lexington Farm, Rowlee Farm, Barnleigh (Cook Farm), and existing specialty crop operations.
 - ~~Continue to administer and enforce the Ridgeline Protection Overlay District. Consider the~~ creation of an overlay district for ridgelines to protect these the scenic qualities of amenities ridgelines and upland areas from development.
 - Adopt a junk and junk car ordinance and appoint an official to enforce the ordinance and impose fines for violators.
 - Create strict standards to minimize potential conflicts between current land uses and the extraction of renewable and finite resources. These standards should address the operation, maintenance, and use of extraction sites based on the unique conditions of the area affected.

Policies

1. The sustainable development and use of land-based resources, such as farming and forestry, consistent with other goals and policies of the Town Plan shall be encouraged.
2. Development and land subdivision shall be configured to minimize the fragmentation of priority forest lands, and to avoid undue adverse impact on significant wildlife habitat.
- 2.3. Home occupations shall be encouraged as long as they are appropriate to adjoining land uses, and do not adversely affect air, water, or scenic resources or cause noise that is offensive to surrounding neighbors. In addition, the following must be shown:
 - a. The home occupation is customarily conducted within a residence.
 - b. The home occupation is clearly incidental to the use of the building as a residence.

3. Cultural features, such as farm and logging roads, stonewalls, tree and fence lines, cellar holes and agricultural buildings, shall be preserved where appropriate. Any cultural features that are modified or removed should be photographed or field surveyed by the Town's Historical Society or by a Conservation Commission.
4. The Town shall work with public and private entities to prepare development or resource management plans that will further the aims of this chapter.
5. The Town shall work with the Upper Valley Land Trust or the Vermont Land Trust to assess and implement easement programs to preserve agricultural and ecologically sensitive land.
6. The Town shall work with the Vermont Department of Forest, Parks and Recreation and the Vermont Fish and Wildlife Department to update management plans for State lands located in Reading.
7. The Town will continue to administer zoning bylaws to maintain the traditional settlement pattern of compact villages surrounded by rural countryside, including productive farmland and large tracts of unfragmented forest land. To this end, the Town will uphold and enforce zoning bylaws that include the following:
 - a. Higher density and/or mixed use zoning districts that reinforce historic villages.
 - b. One or more district to allow industrial or extractive industries in appropriate locations that will help minimize conflict with other land uses.
 - c. Rural residential districts that maintain low overall development densities and the preservation of open space through clustered development, encourage continuation of agriculture, forestry and conservation, and allow only a limited range of commercial enterprises.
 - d. Resource conservation and protection districts, including at least one district designed to discourage land development and maintain large tracts of unfragmented forest land, and overlay districts designed to protect specific resources, including scenic ridgelines and flood hazard areas.
 - e. Thoughtful standards to guide new development, including site design and land subdivision.

Appendix G

Zoning Bylaws Draft Revisions

Section 4.14 SUBDIVISION OF LAND

The subdivision of a single parcel into two or more parcels is permitted subject to Site Plan Review in accordance with Section 5.3 of this bylaw and the following standards and procedures:

4.14.1 Application & Review Procedures

1. **Pre-Application Meeting.** A pre-application meeting shall be held with the applicant and Planning Commission to discuss the nature and scope of the proposed subdivision. Prior to the meeting, the applicant shall provide a brief description and sketches of the subdivision including basic site data, proposed uses and parcel boundaries, density and treatment of open spaces and other resources and project compliance with these regulations. Within thirty days after the Pre-Application Meeting, the Planning Commission shall provide the applicant with written comments and recommendations on the proposal to guide the applicant in preparing the final application for subdivision.
2. **Application.** The applicant shall file an application with the Planning Commission and include materials required for site plan approval (see Section 5.3). The Planning Commission will review the application in accordance with the procedures set forth in Section 5.3.2.

4.14. Subdivision Design Standards

1. In addition to the site plan review standards set forth in Section 5.3. All proposed lots shall be surveyed and shall should meet the minimum dimensional standards for the district within which the lot is located. New lots shall be designed to meet their intended purpose; elongated lots and lots with irregular shapes (curves, jogs, dog-legs, etc.) should not be created unless warranted by conditions of topography, the location of natural features or existing road conditions. Corner lots shall have sufficient width to permit a front yard setback on each street while side lot lines shall generally be at right angles to straight streets, or radial to curved street lines.
2. Existing features, including but not limited to water courses and drainage ways, pathways, historic sites and structures, shorelands, fence and tree lines, wetlands, significant critical wildlife habitat, areas characterized by shallow soils or steep slopes, prominent geologic features, scenic views or any other unique features which have been identified in the Reading Town Plan and/or which in the Commission's judgement judgment are an asset to the site and/or community, shall be identified and preserved insofar as possible through careful placement of buildings, establishment of development envelopes and appropriate lot configuration.
3. Subdivision boundaries, lot layout, development envelopes and building sites shall be located and configured to avoid the fragmentation and/or development of productive farmland and important wildlife habitat (such as deer wintering areas). Methods of avoiding such adverse impacts include but may not be limited to the following:
 - a. Building sites may be restricted to wooded areas at field edges or, in the event that no other land is practical for development, on the least fertile soils in

order to minimize the use of productive agricultural land, impacts on existing farm operations, and disruption to the scenic qualities of the site.

- b. Access roads, driveways and utility corridors shall be shared to the extent feasible and, where sites include linear features such as existing roads, tree lines, stone walls, and/or fence lines, shall follow these in order to minimize the fragmentation of productive agricultural land and minimize visual impacts.
4. Subdivisions and associated development shall be located and configured to minimize fragmentation of, and avoid undue adverse impacts to, priority forest lands identified in the Reading Town Plan in order to maintain traditional land uses in forested areas, including significant wildlife habitat, forest management, watershed protection and dispersed recreation. Methods of avoiding such adverse impacts include but may not be limited to the following
- a. Protection of Significant Wildlife Habitat:
 - i. Subdivision boundaries, lot lines, land clearing and development (e.g., driveways, houses and accessory structures) shall be located and configured to avoid undue adverse impacts to significant wildlife habitat.
 - ii. Development shall be located on the least sensitive areas of the parcel, and boundaries shall be configured to minimize human-wildlife conflicts and to avoid impediments to wildlife travel between large tracts of contiguous forestland.
 - iii. A buffer area of adequate size may be established to protect specific types of habitat (e.g., deeryards, rare, threatened or endangered species habitat, wildlife corridors).
 - iv. The Planning Commission may require the submission of a management plan, prepared by a wildlife biologist or comparable professional, to identify the function and relative value of impacted habitat, and associated management or mitigation strategies.
 - b. Forest Stewardship:
 - i. The subdivision of forest land shall, to the extent practical, be configured to protect forest resources, including unique or fragile areas, streams and aquifer recharge areas, and recreation trails, and to allow for ongoing forest management of the parcel after subdivision.
 - ii. Lot boundaries and development envelopes should avoid fragmentation of defined management areas, highly productive forest soils, and areas containing unique or fragile forest resources.
 - iii. Provision for access and operation of forest management activities should be maintained, unless such access is inconsistent with resource protection objectives.
 - iv. A buffer area of adequate size may be required to avoid conflict between new residential development and existing or potential forest management (including timber harvesting).
 - v. The Planning Commission may request that the Windsor County

Forester, or another qualified professional forester, assist with the review of proposed subdivisions.

c. Clustering: Applications for subdivision of lands identified as priority forest areas shall be applied for in conjunction with an application for Planned Unit Development to maximize opportunities to cluster development through the creation of parcels that are smaller than the minimum acreage required for lots in the underlying district, thereby maximizing the acreage set aside as open space, and encouraging the creation of lots that are of sufficient size to remain eligible for the Vermont Use Value Appraisal program and other local, state and federal programs to encourage on-going forest management.

5. Land shall be subdivided and improved so as to retain, insofar as possible, the natural contours and to conserve the natural cover and soil. The Planning Commission may require the preparation of a sedimentation and erosion control plan to ensure that site improvements, including excavation, road and driveway construction and site clearing and grading, shall not unduly impact neighboring properties or surface waters. Such a plan, if required, shall be prepared by a licensed Vermont Engineer.
65. The proposed subdivision will not create an undue burden on public facilities or create an unreasonable demand for public services, including but not limited to fire and police protection, schools and area roads and highways.
76. Access roads, driveways, and utility corridors shall meet the standards set forth in Section 3.1. All roads serving four (4) or more individual lots shall conform to the design standards for local roads and streets contained within the *Vermont State Standards for the Design of Transportation, Construction, Reconstruction and Rehabilitation on Freeways, Roads and Streets* dated October 1997, or as subsequently amended. Compliance with this standard does not infer any obligation on the part of the Town to assume future responsibility for road maintenance or upgrade. Access to three (3) lots or fewer shall be reviewed by the Planning Commission per Section 3.1 of these regulations and the Town's Highway Ordinance.
87. Driveways serving individual lots shall comply with the Vermont Agency of Transportation's *Standard B-71* for residential and commercial driveways, as most recently amended. Driveways shall be accessible by emergency service vehicles, and shall relate to topography to ensure reasonable grades and safe intersections with public or private roads. For driveways in excess of 500 feet in length, a 10' X 30' turnout may be required.
98. Proposed building lots shall be served by adequate water supply and wastewater disposal systems. The Planning Commission may require documentation that adequate water supply and wastewater capacity is available to serve the proposed development, and that a Wastewater System and Potable Water Supply permit has been issued by the state.

4.14.5 Recording of Approved Subdivision Plat

Within 180 days of the date of final subdivision approval by the Planning Commission, the applicant shall file two copies of a final subdivision plat, for recording with the Town in conformance with the requirements of 27 V.S.A., Chapter 17. Approved plats not filed and recorded within this 180 day period shall expire. Prior to plat recording, the plat must be signed by the Planning Commission Chair or Vice-Chair. The Commission may, as a condition of final plat approval, require that other notations pertaining to conditions of subdivision approval also be included on the final plat.

Section 5.3 SITE PLAN REVIEW

Site Plan Review is generally required for commercial and development type applications excluding day care, group homes, agricultural activities, and one- and two-family homes. Site Plan Review is also required for any Conditional Use and where indicated in Section 2.4.

5.3.1 Application.

An application for Site Plan Review, including a site development plan prepared in accordance with Section 5.3.5, below, shall be submitted to the Administrative Officer for consideration at the next available regularly scheduled meeting of the Planning Commission.

5.3.2 Review Procedure

The Planning Commission shall schedule a public hearing, warned in accordance with Section 6.4, to consider applications submitted. Applications for Site Plan Review shall be deemed received upon the Planning Commission's determination that the application is complete at a duly warned meeting. In the event that the Commission requires additional information not submitted with the initial application, the application will not be deemed complete until such time as all supplementary materials have been accepted.

On complex developments, applicants are encouraged to request a pre-application meeting to review the project in concept and discuss the information needed for a complete application. The Planning Commission must act to approve or disapprove any application within 60 days of the date on which a completed application is received, and must issue a written decision including findings and conditions. Failure to act within 60 days of receipt of the completed application shall be deemed approval.

5.3.3 General Standards

In reviewing site plans, the Commission may impose appropriate conditions and safeguards with respect to adequacy of traffic access, circulation and parking; landscaping and screening; compatibility with surrounding development; noise, vibration, erosion, and dust; and protection of natural resources. Consideration shall be given to traffic mobility and safety on affected streets, impacts on surrounding uses, and to desired land use patterns as encouraged by the Municipal Plan and the zoning regulations of the affected district(s). Conditions may include, but are not limited to, the following:

1. **Compatibility with surrounding development:** The Commission may require the design and placement of structures to conform with the existing relationship of surrounding buildings to the street, the landscape, and to each other, including setback distances, physical orientation, construction materials, and architectural design. Design shall not be limited to any particular style or period, but should be consistent with established trends and patterns in the surrounding area.

2. **Traffic access and circulation:** Among other appropriate safeguards and conditions, the Commission may:
 - a. require the installation of frontage roads, speed change lanes, or other highway design elements on a street or adjacent to any access or connecting roads, if deemed necessary based on current or anticipated conditions.
 - b. limit the number and width of access drives; require consolidation of existing access points.
 - c. limit access to a property to a side street or secondary road in order to avoid access to heavily traveled streets and highways.
 - d. require shared access and/or parking for adjoining properties or for future users of the remainder of a parcel; require the reservation of shared rights-of-way for future roads, parking areas, and pedestrian facilities; allow for consolidation or shared use of required parking spaces between uses.
 - e. require an applicant to commission a traffic impact study from a qualified consultant.
 - f. require the location or relocation of access points on one side of a street or highway directly across from existing access points on the opposite side.
 - g. prohibit the location of parking facilities between the front line of building(s) and the street.
 - h. accommodate existing or future facilities for non-vehicular travel.
3. **Protection of natural resources:** The Commission may require that structures, parking facilities and other development be located so as to avoid impacts to surface waters, wetlands, significant wildlife habitat, agricultural land, important scenic resources, and significant natural and cultural features. These requirements may include modification of the minimum setback distances of the district.
4. **Historic Resources.** Consideration should be given to the impact of the proposed development on historic structures, on site or on adjacent properties. To the extent feasible, continued use of historic structures should be encouraged and the appearance of historic structures encouraged.
5. **Character of the neighborhood.** The Commission may consider if the scale and appearance of the proposed development does not adversely affect the character of the neighborhood.
6. **Forest Management & Pre-application Site Development.** Forest management activities designed as pre-development site preparation shall be reviewed by the Planning Commission to determine compliance with the standards set forth in this section. Such activities include, but are not limited to, road and driveway construction, excavation related to the upgrade and conversion of logging roads to development roads or driveways, clearing

and/or grading for house-sites and septic systems, or related work. Where a landowner fails to submit pre-development plans for review, the Commission may direct the manner in which the site will be restored or re-vegetated prior to development and/or limit development to a portion of the property which best meets the standards of this district.

5.3.4 District and Use Recommendations

To sustain the Town's goals of maintaining its rural character and heritage of compact village centers surrounded by rural countryside, development in the different zoning districts should complement each other, foster the Town's goals, and may be considered in Site Plan Review.

1. **Village Districts.** Within these districts, site plan should reinforce a traditional, compact village development pattern characterized by pedestrian scale, functional and visual integration of neighboring properties and a mix of uses. To help achieve these objectives, the following suggestions may be considered:
 - a. Buildings should be oriented to define a streetscape through a consistent building line and setbacks. Buildings may be clustered around a common focal point, such as a green or public courtyard, while maintaining an appropriate visual and functional relationship with public roads.
 - b. Consideration should be given to the layout and design of development located at village edges, including entrances or gateways along public roads. Structures should be clustered and integrated within the traditional village pattern, present a well-defined edge between the built environment and surrounding open space, and visually enhance village entrances.
2. **Rural Residential Districts.** Within rural districts, site plans should be designed to maintain the rural character of the Town's working landscape and to avoid undue adverse impacts on farmland, forestry, scenic and natural areas. To help achieve these objectives, the following suggestions may be considered:
 - a. The siting of structures, driveways and parking areas should be compatible with existing site features and topography. Structures should be clustered and/or sited to preserve the rural and scenic character of the site and avoid the development or fragmentation of open meadows and productive farm and forest land.
 - b. Building design should be compatible with the rural landscape through scale and orientation of the buildings, and design elements characteristic of Vermont's historic rural landscape.
1. **Conservation & Resource Protection Districts.** Within the Residential/ Conservation (RC-25) District development and subdivisions shall be designed

and boundaries configured to preserve existing forest resources and fragile features and to maintain traditional land uses including significant wildlife habitat, forest management, limited agriculture (e.g., maple sugaring), small seasonal camps, watershed protection and dispersed recreation. The fragmentation of productive forest lands (e.g., lands characterized by forest access and logging roads, productive forest soils as identified by the U.S. Natural Resource Conservation Service, a history of productivity, and a total acreage suited for long term forest management (i.e. 25 acres or more)) shall be avoided.

5.3.5 Requirements

Site plans shall show or designate the following:

1. All site plans
 - a. The location, height, and spacing of existing and proposed structures.
 - b. Open spaces and their landscaping.
 - c. Streets.
 - d. Driveways.
 - e. Off-street parking spaces.
 - f. All other physical features, including surface waters and wetlands, stone walls and fences, and elevations and contours.
 - g. Acreage of entire parcel, with existing and proposed lot boundaries.
 - h. Significant Wildlife Habitat Areas designated by the Vermont Agency of Natural Resources as critical wildlife habitat or as known locations of endangered or threatened species.
2. Subdivision regulations. In addition to the materials required under subsection 1, above, applications for subdivision approval shall submit the following:
 - a. A plan showing existing and proposed lot boundaries prepared by a licensed Vermont engineer or registered surveyor.
 - b. Location and description of proposed septic disposal facilities and water supplies.
 - c. Proposed development envelopes.
 - d. Proposed site clearing.
 - e. Other information that may be required by the Planning Commission, including proposed stormwater management and erosion control plan, forest management plan and/or wildlife habitat impact assessment and mitigation plan.
3. Wireless communications facilities. In addition to the materials required under subsection 1, applications for wireless communications facilities shall submit

the following:

- a. A report from a qualified and licensed professional engineer that describes the tower height and design including a cross section and elevation.
- b. A written five-year plan for use of the proposed facility, including reasons for seeking capacity in excess of immediate needs, as well as plans for further developments and coverage within the Town.
- c. For all commercial wireless telecommunication service towers, a letter of intent committing the tower owner and his or her successors to permit shared use of the tower if the additional user agrees to meet reasonable terms and conditions for shared use.
- d. Vicinity Map showing the entire vicinity within a 2500-foot radius of the tower site, including the topography, public and private roads and driveways, buildings and structures, water bodies, wetlands, landscape features, historic sites, and areas designated by the Vermont Agency of Natural Resources as critical wildlife habitat or as known locations of endangered or threatened species. It shall indicate the property lines of the proposed tower site parcel and all easements or rights of way needed for access from a public way to the tower.
- e. Proposed plans of entire development indicating all improvements including landscaping, screening, power lines, storage and maintenance buildings, and roads.
- f. Elevations showing all facades and indicating all exterior materials and color of towers.

Hearings for Conditional Use and Site Plan approval may be consolidated, at the discretion of the Board of Adjustment.

5.4 PLANNED UNIT DEVELOPMENT (hereinafter called P.U.D.)

5.4.1 Purpose

The purpose of a P.U.D is:

1. To provide for conservation of open space, e.g. agricultural land, forest land, trails, critical and sensitive natural areas, scenic resources, and flood hazard areas;
2. To encourage any development in the countryside to be compatible with the use and character of surrounding rural lands;
3. To encourage and enable flexibility of design and development of land and to promote the most appropriate use of the land as articulated in the Town Plan and zoning bylaws;
4. To facilitate the adequate and economical provisions of streets and utilities.
5. To encourage the provision of affordable housing; and
6. To encourage and preserve opportunities for energy-efficient development and redevelopment.

5.4.2 General

In zoning districts R1, RC-A, RR-5, RR-10 and RR-25, for the permitted and conditional uses allowed in those districts, an owner of a tract of land, or his duly authorized agent may in connection with the subdivision of his/her tract request that the Planning Commission modify the zoning regulations. Modification of the zoning regulations may be permitted by the Planning Commission and Zoning Board of Adjustment after approval of the subdivision plat through combined Conditional Use and Site Plan Review. The combined boards may, as a condition of granting said modifications, impose such

restrictions and conditions as it deems necessary to assure the proper development of the tract as a P.U.D.

5.4.3 Review Procedure

1. **Pre-Application Meeting.** A pre-application meeting shall be held with the applicant, Planning Commission, and town officials to discuss the nature and scope of the proposed PUD. Prior to the meeting, the applicant shall provide a brief description and sketches of the PUD including basic site data, proposed uses, density and treatment of open spaces and other resources. Within thirty days after the Pre-Application Meeting, the Planning Commission shall provide the applicant with written comments and recommendations on the proposal to guide the applicant in preparing the PUD application.
2. **Application.** The applicant shall file an application with the Planning Commission and ZBA and include materials required for site plan approval (see Section 5.3). Also, applicant shall include a description of the PUD and rationale for it, response to the Planning Commission's prior comments, description of buildings, open spaces and resource protection plans, and

supporting information that the Planning Commission may deem necessary to determine if the PUD meets town standards.

3. **Public Hearing and combined ZBA/Planning Commission Action.** Within 30 days of receipt of completed application, the ZBA and Planning Commission shall hold a joint public hearing per Section 6.4. Within 45 days after the public hearing, the ZBA and Planning Commission shall provide a written ruling on the PUD including conditions, modifications, and/or reasons for approval or disapproval. Copies of the decision shall be sent to the applicant and interested parties appearing at the hearing.
4. Any modifications of the zoning regulations approved under this section shall specifically set forth the conditions and criteria for the number, the bulk, and the spacing of buildings and/or lots and the limitations on subsequent subdivision thereto. These shall be noted as amendments to the plat. Once approved, the plat, with amendments, shall be recorded in the Reading Land Records. This shall be done prior to the sale or development of any of the lands described thereon. This plat shall also be referred to and incorporated by reference in any deed or other instrument conveying an interest in all or a portion of said lands.

5.4.4 General Development Standards

PUDs, including any modifications of the zoning bylaw to be approved by the ZBA and Planning Commission, shall be subject to the following conditions and standards:

1. The PUD will meet Subdivision and Site Plan Review standards under Section 4.14 and 5.3, respectively and be consistent with the Reading Town Plan.
2. The PUD shall be a unified treatment of the possibilities of the site, making provision for the preservation of surface and groundwaters, stream banks, slopes with gradient in excess of 25 percent, wetlands, soils unsuitable for development due to shallow depth to bedrock or high water table, limitations for on-site sewage disposal, agricultural lands, historic or archeological sites, natural areas, wildlife habitat, ridgelines and hilltops, flood plains, and scenic views and vistas. Predominant uses of the site may include those permitted and/or conditional uses allowed within the district where the project is proposed.
3. The overall density of the project shall not exceed 125 percent of the number of dwelling units permitted if the land were subdivided into lots in accordance with the standards for the district(s) in which the land is situated, except where specifically permitted in these regulations and as permitted below:
 - a. an additional density bonus of up to 25% of the permitted overall density may be permitted in any district in instances in which not less than 50% of the total acreage involved is set aside as open space in accordance with Subsection 9, below; or

- b. an additional density bonus of 25% of the permitted overall density may be permitted in instances in which not less than 20% of the total number of dwelling units created are affordable housing units, as defined in Article 7.
4. Where a district boundary line divides a parcel, the ZBA and Planning Commission may allow the development of a single PUD with a total density based on the allowable density of each district. Contiguous parcels under the ownership or control of the applicant may be combined for review as a PUD. The permitted density on one parcel may be increased as long as the overall density for the combined parcels does not exceed that which could be permitted if the land were subdivided into lots in conformance with district regulations.
5. A greater concentration or intensity of residential development may be located within some portion(s) of the site provided there is an offset by a lesser concentration in another portion(s) or an appropriate reservation of open space on the remaining land in accordance with Subsection 9, below.
6. The dwelling units permitted may, at the discretion of the ZBA and Planning Commission, be of varied types including one-family, two-family, and multi-family.
7. The minimum front, side and rear yard setbacks at the periphery of the PUD shall be as required for the district unless specified by the ZBA and Planning Commission. The ZBA/Planning Commission may consider other setback standards, such as zero lot lines as part of its review. The ZBA/Planning Commission may impose restrictions on the height and spacing of buildings; greater setback and screening requirements for structures and parking areas and other development along the perimeter of the project, and between development areas and common open space areas.
8. The minimum size of any subdivided lot shall be one (1) acre. Each such lot shall comply with all existing regulations for one-acre residential lots, and shall meet all local and state health regulations for water supply and sewage disposal.
9. Provision for preserved open space shall be made and dedicated, either in fee or through a conservation easement approved by the ZBA/Planning Commission to the Town, a community association comprising all of the present and future owners of lots in the subdivision, or a nonprofit land conservation organization. Land held in common shall be subject to appropriate deed restrictions stipulating the permitted and restricted use of such lot, and establishing the person or entity responsible for maintenance and long-term stewardship. The location, size and shape of lands set aside to be preserved for open space shall be approved by the ZBA/Planning Commission, in accordance with the following:
 - a. Open space shall provide for the protection of identified resources, including farmland, productive forest, significant wildlife habitat,

natural areas, aquifer protection areas, surface waters, stream banks, historic and archeological sites, and scenic views and vistas. Generally open space shall be at least 50% of the total area.

- b. Open space shall be suitably improved and/or maintained for its intended use, except for open space containing natural or cultural resources worthy of preservation which may be required to be left unimproved.
- c. Sewage disposal areas and utility and road rights-of-way or easements, access and parking areas shall not be counted as open space areas, except where the applicant can show that they will not detract from the values for which the open space is to be protected.
- d. Within the Resource Conservation (RC-25), Rural Residential-10 (RR-10) and Rural Residential-5 (RR-5) Districts, open space shall be configured to encompass significant wildlife habitat and priority forest resources identified in the Town Plan. A minimum of 70% of the parcel shall be set aside as open space. Lots created as part of a PUD shall either be of sufficient size for enrollment in the Vermont Use Value Appraisal program after development, or be limited to the maximum acreage needed to accommodate the proposed development, regardless of the minimum lot size for the district in which it is located, in order to maximize the preservation of large parcels of forest land and habitat.

- 10. Roads developed in a P.U.D shall be built to Town of Reading specifications. A road which is a "dead end" shall have a minimum turn-around area with a radius of 100 feet, in which no parking is allowed.
- 11. Principle buildings and mixed uses (where permitted) shall be arranged to be compatible, and buffered as appropriate to ensure visual and acoustical privacy for residents of the development and for adjacent properties.
- 12. The development shall not exceed, in the ZBA/Planning Commission's judgment the Town's capacity for services and facilities. If the ZBA/Planning Commission finds an excessive burden will be placed on town services, it can require the developer to provide comparable private services or share the cost with the Town.

