
WCS ADIRONDACKS

Incorporating wildlife science into land-use planning to
improve private lands conservation



A SYNTHESIS REPORT

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Executive Summary

This report synthesizes the work that the Wildlife Conservation Society (WCS) conducted under a science delivery grant from the North Atlantic Landscape Conservation Cooperative (NALCC). It provides resources and practical recommendations for integrating conservation science into land-use planning and development to ensure that wildlife and other natural resources are protected for generations to come. This work not only will benefit communities across the NALCC region, but also beyond, as towns and counties across the nation struggle with the impacts of land-use change on natural resources.

Overview

In the U.S., wildlife depend disproportionately on biologically productive private lands for habitat resources, landscape connectivity, and persistence. One out of every four acres of private land in the U.S. has been converted to low-density housing development. Landscape-level patterns of land use and development result from the accumulation of many discrete decisions made by individual landowners and local governments. However, many local jurisdictions do not have the necessary information or expertise to effectively incorporate wildlife conservation into planning and development decisions. As a result, planning tools often lack adequate guidelines, restrictions or incentives for conservation. The rapid conversion of private land to residential development and limited funding for conservation make this a critical time for communities to implement innovative land-use policies and incentives. An important priority is the application of current science to inform the design and application of land-use planning tools to improve the stewardship and protection of private lands. The goal of this report is to recommend ways to apply current science to land-use planning tools to ensure that conservation on private lands is successfully protecting wildlife species, habitats, and other natural resources. To accomplish this goal, our objectives were to:

1. Conduct an analysis of municipal land-use regulations in the northeastern U.S. to identify opportunities for adopting or revising land-use planning tools to improve conservation outcomes.
2. Convene experts in the fields of ecology and planning to identify ways to strengthen private land-use planning tools using current ecological principles.

Approach

We reviewed planning tools and development incentives in municipal land-use regulations in Maine, New Hampshire, Vermont, and northern New York, identifying 85 towns with one or more planning tools for conservation: conservation development (CD; 80% of towns), overlay district (69%), subdivision design standards (42%), environmental analysis (30%), density bonus (20%), transfer of development rights (TDR), purchase of development rights (PDR) (10%), and sustainable design certification (6%). We then convened a 2-day workshop of researchers, planners, and consultants from universities, regional planning agencies, and organizations that provide technical support to communities on land-use planning to review the content of existing planning tools and to generate suggested revisions that improve their effectiveness for conservation of wildlife species and habitats on private lands in the northeastern U.S. We focused specifically on CD and overlay districts, and we developed “composite” models for each tool incorporating important elements to strengthen conservation on private lands. The workshop participants provided recommendations for and identified challenges with adoption and

implementation of both tools. The composite drafts provide a starting point for new model ordinances designed to meet the needs for private lands conservation in rural communities in the northeastern U.S.

The results of this project demonstrate that many communities in the northeastern U.S. have tools available for minimizing the negative effects of development on private lands. Although these tools are disproportionately found in more populous and urbanized areas, they can serve as examples for the more resource-rich rural regions that are just beginning to experience the impacts of low-density development. With minor modifications, CD and overlay districts are two planning tools that could improve the ability of rural communities to protect species and habitats of greatest conservation concern. Moreover, using the two tools together could yield a more comprehensive approach to protecting wildlife habitats and other natural resources on private lands. To effectively implement ordinances with improved outcomes for conservation, local planning jurisdictions need access to current information on the natural resources in their communities and technical expertise to help interpret that information. They may also require community engagement processes that empower citizens and elected officials to work with developers and landowners to design future uses of the land that maintain the health and well-being of both natural and human communities.

We recommend the following process for engaging communities across the northeastern U.S. to adopt or update local land-use planning tools to incorporate the best available conservation science:

1. Identify those communities whose natural resources are most at risk from development;
2. Determine which land-use planning tools are already available to the community;
3. Work with the community to raise awareness of the need for conservation;
4. Identify individuals within the community who can champion change; and
5. Provide resources, including model ordinances, natural resources data, and technical expertise, to implement those changes.

Next Steps

To ensure that work from this NALCC science delivery project will continue to generate conservation successes on private lands, we recommend the following important next steps:

1. Finalize model ordinances for CD and overlay districts based on the information compiled in this report and disseminate to communities in the northeastern U.S.
2. Organize follow-up workshop(s) in the Northeastern region to focus on additional land-use planning tools, such as TDR and strategies for addressing the uncoordinated single-family home development that is common across the northeastern U.S.
3. Work with towns in the northeastern U.S. that have high conservation value, face population growth and development, and have good opportunities to improve existing land-use planning tools, to implement changes using information provided in this report.
4. Initiate a science delivery approach in which science-based guidelines for land-use planning and stewardship be synthesized and distributed to a network of conservation practitioners who then can work with communities to integrate the recommendations into local planning decisions.



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1. INTRODUCTION

One out of every four acres of private land in the U.S. has been converted to low-density housing development (Brown et al. 2005), with extraordinary consequences for nature and society. Specialist animal species are being replaced with human-adapted generalists (Glennon and Kretser 2013), human-wildlife conflicts are on the rise (Kretser et al. 2008), and fragmented landscapes inhibit natural processes and impede migrating species (Goad et al. 2014). This systematic transformation compromises the ability of private lands to remain the most biologically productive places on the landscape and continue supporting the greatest proportion of species (Scott et al. 2001). The recovering U.S. housing economy, the rapid conversion of private lands to residential development, and the limited funding for conservation make this a critical time to implement innovative policies and incentives for integrating biological science with land-use planning and development.

Landscape-level patterns of land-use and development result from the accumulation of many local-scale decisions made by individual landowners and town or county governments (Kahn 1966, Theobald et al. 2000) and rarely produce a desirable outcome for the environment (Odum 1982). Most rural communities have limited capacity or resources to effectively incorporate conservation into those decisions (Miller et al. 2009). As a result, planning tools for conservation on private lands lack adequate guidelines for residential design, construction, or stewardship (Reed et al. 2014). Working locally with community decision-making processes takes resources and time to achieve conservation results (Wondelleck and Yaffee 2000). Regional organizations working toward conservation and protection of private lands in the northeastern U.S. should therefore prioritize working with communities that harbor important habitats and species of greatest conservation need (SGCN) and have existing tools for private lands conservation within their land-use codes. Typically, tools already within the land-use code are reviewed and revised periodically by towns (Reed et al. 2014). Thus, we anticipated that recommending minor revisions or additions to these existing tools would be more feasible for achieving conservation outcomes than recommending adoption of new and untested tools. Examining the content of planning tools and development incentives already adopted into local land-use regulations enables organizations to prioritize which communities have the highest potential for achieving conservation via slight modifications to existing language that may yield improved design and stewardship outcomes for conservation. In addition, communities may be more likely to adopt new tools and approaches when introduced to these concepts as success stories from their peer communities (Kretser et al. *In Prep*).

The Wildlife Conservation Society (WCS) collected a dataset of local land-use regulations from >1,400 local jurisdictions (villages, towns, counties, and regional commissions) in four states (New York, Vermont, New Hampshire, and Maine) and identified specific ordinances or regulations that provide guidelines or incentives to encourage conservation development (CD) (Smith et al. 2012). CD is an approach to the design, construction, and stewardship of a development that achieves functional protection of natural resources, while also generating social and economic benefits for human communities. However, CD is just one tool for protecting conservation values on private lands. Many other approaches, such as overlay districts, transfer of development rights (TDR), environmental analysis, purchase of development rights (PDR), payments for ecosystem services (PES), management agreements, or sustainable design certification, may be equally important in guiding development away

from priority habitats or those habitats that contain important natural resources or enable ecosystem processes to occur unhindered (Table 1). Information about towns using some conservation approaches exists for a subset of the four-state region (e.g., Sneddon et al. 2011, VNRC 2014), but a comprehensive dataset describing the breadth of conservation tools available to the municipalities surveyed was lacking.

Furthermore, although some land-use planning tools incorporate conservation elements, our research indicates that many existing tools, including CD, lack basic guidelines and standards for reaching desired conservation outcomes, such as a quantitative requirement for land protection, or guidelines for conducting an ecological site assessment prior to designing the developed area (Reed et al. 2014, Smith et al. 2012). Furthermore, a large body of scientific research on the effects of private land development on biological diversity exists (Pejchar et al. 2015), but is rarely translated to practical guidance for land-use planning and development (Reed et al. 2014).

The North Atlantic Landscape Conservation Cooperative (NALCC), one of the 22 Landscape Conservation Cooperatives created by the Department of the Interior in 2010, is a partnership in which the private, state, tribal, and federal conservation community work together to address increasing land-use pressures and widespread resource threats and uncertainties amplified by a rapidly changing climate. The NALCC Science Delivery program awarded grants to prioritize the incorporation of current information and best practices into local decision-making processes. Steps to improve the conservation guidelines within planning tools could strengthen land-use planning capacity and identify strategic opportunities for NALCC partners to prioritize where to focus efforts for private land stewardship.

For this project, we sought to recommend ways to integrate ecological principles into land-use planning tools to ensure private lands conservation approaches are meeting the conservation objectives as defined by state agencies, regional commissions, local municipalities, and conservation practitioners in the four-state region. To accomplish this goal, our objectives were to:

1. Conduct an analysis of municipal land-use regulations in the northeastern U.S. to identify opportunities for adopting or revising land-use planning tools to improve conservation outcomes.
2. Convene experts in the fields of ecology and planning to identify ways to strengthen private land-use planning tools using current ecological principles.

Table 1. Land-use planning tools and incentives for conservation and their definitions.

Tool	Definition	References
Conservation Development (CD)	An approach to the design, construction, and stewardship of a development that achieves functional protection of natural resources, while also providing social and economic benefits to human communities. Homes in CD subdivisions are built on smaller lots and clustered together, allowing for a substantial portion of the property (typically >50%) to be permanently protected for conservation purposes.	Pejchar et al. (2007); Milder (2007); Milder and Clark (2011); Reed et al. (2014)
Purchase of Development Rights (PDR)	A voluntary program in which a land trust or local government purchases development rights from a landowner with compensation from public funds and/or tax credits. A permanent deed restriction, often a conservation easement, is placed on the property which restricts in perpetuity the types of activities which may take place on the property to protect its conservation values.	Daniels (1991); Daniels and Lapping (2005)
Transfer of Development Rights (TDR)	A program that allows landowners to buy, sell, or transfer development rights from one property to another. TDR programs are intended to reduce or eliminate development potential in areas that are a high priority for conservation, while directing future growth to areas where infrastructure and services already exist.	Machemer and Kaplowitz (2002); Kaplowitz et al. (2008); Pruetz & Standridge (2008)
Overlay District	A mapped zoning designation that identifies conservation targets and supplements the underlying zoning standards with additional requirements that are designed to protect those targets. For example, developers of properties within overlay districts may be required to preserve certain natural features or conduct environmental assessments to avoid or mitigate potential impacts.	McElfish (2004); Duerkson and Snyder (2005)
Environmental Analysis	A required review of development proposals for potential impacts on conservation targets.	Mandelik et al. (2005)
Payments for Ecosystem Services (PES)	A program in which landowners are compensated, by a local government or private organization, for the environmental services generated by their lands (e.g., clean water, reduced flooding risk, or carbon sequestration).	Goldstein et al. (2011)
Sustainable Design Certification	A system of voluntary guidelines and performance standards for sustainable design, construction, and stewardship of a development and/or associated open space. A third-party (typically non-profit) organization reviews projects and certifies them according to the level of standards achieved.	Sustainable Sites Initiative (SITES); LEED for Neighborhood Development (LEED-ND)

2. METHODS

2.1. Ordinance Review

To identify ordinances that could be effective tools for incorporating conservation into planning and development decisions, we sampled land-use regulations from a representative set of towns from a previous inventory of CD ordinances (Kretser and Reed 2012). We developed a master list of >1,400 towns in the Northeastern region (Maine, New Hampshire, New York, and Vermont) in which to search for land-use regulations, and planning tools and incentives within those regulations, that could be used to improve design and stewardship of development on private lands. We found 962 towns that had land-use regulations; of those, 431 unincorporated Maine towns have land-use governed by one set of regulations (Kretser and Reed 2012). The list of 502 towns with regulations was the starting point for our analysis.

We selected a spatially-balanced sample of those towns with land-use regulations to conduct our review of additional planning tools and incentives. We generated a sample of towns with broad geographic representation, across gradients of human population, development, and conservation value. Our sample was also proportional to the relative representation of land-use regulations in each state. This approach ensured that our review would encompass a representative set of towns in the four-state region, regardless of the final sample size. We completed a review of planning tools and development incentives for 127 towns.

For each town reviewed, we checked our existing database of town regulations to see if we had a copy of the land-use regulations. For towns that we did not have land-use regulations on-hand, we searched town websites, municipal code databases, and libraries for subdivision and zoning regulations, comprehensive land-use codes, and special ordinances. All relevant regulations were downloaded. For the towns where we had land-use regulations on hand, we conducted web searches to determine if a more recent version of the regulations was available.

We defined a list of keywords to search for seven types of planning tools and development incentives in selected land-use regulations (Table 2) and established a protocol for the review. The tools and incentives included CD, PDR, TDR, overlay districts, environmental analysis, PES, and sustainable design certification. We used a broad list of keywords to search the first 30 land-use regulations and then narrowed the keyword list based on what types of tools we were most interested in for this analysis and what types of tools were actually available in the land-use regulations.

We tracked the land-use regulations in a spreadsheet to facilitate future review of the documents. For each land-use regulation, we noted the town, state, type of regulation, how we obtained the regulation (from the initial review or through the subsequent web search), the publication year, the presence of tools in the regulations, notes about the type of tools found, and other relevant details not captured in the spreadsheet. We then selected tools to focus on in the practitioners' workshop.

Table 2. Keywords used to search land-use regulations for conservation planning tools.

Keywords
<i>Words from potential tools, tool indicated in parenthesis</i>
Conservation (Conservation Development)
Open Space (Conservation Development/Density Bonus)
Easement (Conservation Development)
Planned (Conservation Development)
Cluster (Conservation Development)
Density (Conservation Development/Density Bonus)
Rights (Transfer/Purchase of Development Rights)
Transfer (Transfer of Development Rights/Density Bonus)
Purchase (Purchase of Development Rights)
Overlay (Overlay District/Other Special Zoning or Districts)
District (Overlay District/Other Special Zoning or Districts)
Shore (Overlay District/Other Special Zoning or Districts)
Zone (Overlay District/Other Special Zoning or Districts)
Environment (Environmental Impact Analysis)
Impact (Environmental Impact Analysis)
Assess (Environmental Impact Analysis)
Ecosystem (Payments for Ecosystem Services)
Sustain (Sustainable Design Certification)
<i>Other words indicative of conservation</i>
Wildlife
Habitat
Resource
Natural
Vegetation

2.2. Workshop

At a prior workshop, conducted with the support of the U.S. Forest Service Open Space Conservation program, we invited leading biological experts to collaboratively generate science-based recommendations for how residential design and stewardship guidelines could be improved to protect wildlife habitat on private lands (Reed et al. 2016). The resulting guidelines were intended to be general enough to be applicable at a national level. However, we recognized that our recommendations needed to be tailored to regional social and ecological contexts in order to be successfully adopted and implemented by local communities. In addition, we had a preliminary discussion of the land-use planning tools, development incentives, and certification programs that could be used to implement our recommendations, but we did not have sufficient time or appropriate expertise among the workshop participants to review existing planning tools or generate model code language. We proposed that a next step to ensure successful adoption and implementation would be to convene regional workshops. The workshops would enable us to adapt our recommendations to the local ecological context and generate suggested revisions to land-use planning tools and incentives to improve their effectiveness for conservation. The opportunity to host a workshop through the NALCC Science Delivery grants provided an ideal forum to take this next step.

Thus, we convened a 2-day workshop of researchers, planners, and consultants from universities, regional planning agencies, and organizations that provide technical support to communities on land-use planning to review the content of existing land-use planning tools and incentives and generate suggested revisions to improve their effectiveness for conservation of wildlife species and habitats on private lands in the northeastern U.S. We began the workshop with an overview of the importance of private lands for conservation and the need to incorporate recommendations based on current biological science into land-use planning tools and incentives. To assist in this discussion, we shared recommendations for how residential design and stewardship guidelines could be improved to protect wildlife habitat on private lands, which were generated at the first workshop (Reed et al. 2016). These recommendations were grouped into five broad categories: biological consultation, ecological site analysis, clustering, open space, and stewardship and education (Table 4). This process enabled the workshop participants, who primarily represented land-use planning and local community perspectives, to reflect upon and provide suggested revisions to clarify the biological recommendations and make them more relevant to an applied land-use planning context.

In advance of the meeting, we used the land-use regulations database and results of the ordinance review to identify the most common planning tools that currently exist in the sampled towns. We selected “strong” examples of three tools (e.g., CD, overlay districts, and TDR, see results) from communities in the study area, with elements likely to yield meaningful conservation of wildlife species and habitats, for review by the workshop participants (Table 3). We supplemented these local examples with model ordinances for the same tools where available (e.g., Sneddon et al. 2011). At the workshop, we facilitated participatory exercises and structured discussions to examine the tool examples and model ordinances and to collaboratively generate suggested revisions to improve their conservation effectiveness. The discussions began with a review of the biological science-based recommendations for how residential design, construction, and stewardship guidelines could be improved to protect wildlife

habitats on private lands (Reed et al. 2016; Table 4). We then conducted an exercise to select elements of each ordinance provided in advance of the meeting to keep, drop, or add, prioritizing missing elements as well as identifying elements in the tools that may be redundant or unnecessary. Finally, working in two small groups, we applied the biological recommendations and elements from the “keep, drop, add” exercise to compile new models of each tool. We provided large-print copies of the tool examples, as well as scissors, glue, colored markers, and large sheets of paper. Working with these materials, the small groups created new “collage” ordinances, integrating the strongest elements from multiple ordinances, plus new ideas generated at the workshop, into drafts of improved model ordinances. We concluded the exercise by asking the two small groups to discuss three questions with one another: (1) How did your group integrate the biologist’s recommendations? (2) What were the most important information gaps identified by your group? (3) What challenges did you identify for implementation?

Table 3. Criteria for selection of “strong” conservation development, overlay district, and transfer of development rights planning tools and specific examples to review at the workshop.

Tool	Criteria	Examples
Conservation Development (CD)*	<ul style="list-style-type: none"> • Includes objective(s) or purpose related to conservation of species, habitats, or landscape connectivity; • Requires at least half (≥50%) of the site area to be protected as open space; • Requires site analysis to identify and map important ecological features (i.e., ecological site analysis); • Requires a plan for management or monitoring of biological resources in the protected open space. 	<ul style="list-style-type: none"> • Cluster Development, Town of Newry, Maine • Planned Residential Development, Town of Elmore, Vermont • Model Conservation Subdivision Ordinance, New Hampshire
Overlay District*	<ul style="list-style-type: none"> • Includes objective(s) or purpose related to conservation of species, habitats, or landscape connectivity; • Areas within overlay district have been identified in a rigorous process involving empirical data or biological expertise; • Encourages conservation of large, contiguous areas of habitat that contribute to landscape connectivity. 	<ul style="list-style-type: none"> • Smart Growth Overlay District, Town of Brunswick, Maine • Overlay Districts, Town of Jericho, Vermont • Model Natural Resources Conservation Ordinance, North Carolina
Transfer of Development Rights (TDR)	<ul style="list-style-type: none"> • Includes objective(s) or purpose related to conservation of species, habitats, or landscape connectivity; • Sending areas have been identified in a rigorous process involving empirical data or biological expertise; • Authorizes a TDR credit bank that prioritizes areas with high conservation value for acquisition. 	<ul style="list-style-type: none"> • Development Transfer Program, Town of Topsham, Maine • Transfer of Development Rights, City of Dover, New Hampshire • Transfer of Development Rights Model Bylaws, Massachusetts

**Ordinance examples included in Appendices C and D.*

3. RESULTS

3.1 Ordinance Review

We collected land-use regulations from a spatially-balanced sample of 127 towns across the four-state region and searched them for land-use planning tools or incentives for conservation. Our analysis identified 85 towns with at least one example of a conservation planning tool and several towns included two or more tools: CD (80% of towns), overlay district (69%), subdivision design standards (42%), environmental analysis (30%), density bonus (20%), TDR or PDR (10%), and sustainable design certification (6%). One planning tool targeted by our analysis, PES, was not documented in any town.

Many of the tools we identified tended to be in communities with relatively higher population (\bar{x} = 5,005 compared to communities without tools \bar{x} = 1,114, $F=26.16$, $p<0.00$), and over a third of the towns with tools had additional capacity for planning (e.g., a planner on staff). Low population, rural communities that often coincide with less planning capacity and higher conservation value tended to be less likely to have regulations with land-use tools for conservation or regulations at all. Just one of the 42 towns we identified with no conservation planning tools had additional planning capacity beyond a volunteer planning board.

Based on our review of existing land-use tools, we selected CD, overlay districts, and TDR programs as suitable to review in the practitioners' workshop. These were among the most common tools that we encountered in our review, and we anticipate that making minor revisions or additions to these existing tools will be more feasible than recommending adoption of new and untested tools. We used pre-defined criteria to select "strong" examples of each of the three tools to review at the workshop (Table 3). We also identified model ordinances for each of the tools to be used as a starting point for discussions in the workshop.

3.2. Workshop

We successfully hosted the 2-day practitioner workshop at Lake Morey Resort in Vermont (Appendix A). We had 15 attendees representing regional planning agencies, organizations that provide technical support to local towns, and research universities, and several land-use planning consultants. The meeting took place December 2-4, 2015. Dr. Heidi Kretser led the organization of the meeting, Dr. Sarah Reed facilitated the discussions, and other WCS staff assisted with leading small group work and notetaking.

We began the workshop by examining recommendations for how residential design and stewardship guidelines could be improved to protect wildlife habitats on private lands. Some of the suggestions provided by the workshop attendees included: reducing technical language and providing clear definitions of terms; avoiding terms that might have negative or specific regulatory connotations for planning or development practitioners (e.g., consultation); considering the scale and context in which recommendations would be implemented; addressing the feasibility of implementing the more data- and effort-intensive recommendations; and ensuring the recommendations provide actual useful information to the planners and developers who then need to make specific decisions (Table 4).

We then examined the “strong” examples of CD and overlay district planning tools to identify potential ways to improve their conservation effectiveness. Although we had also selected examples of TDR programs, we agreed with the workshop participants to focus our limited time together on refining the CD and overlay district tools. Table 5 and Table 6 summarize the important elements of each tool that should be retained for future ordinances (“keep”), elements that may be redundant or unnecessary (“drop”), and important elements that were missing from the examples we provided (“add”).

Finally, using the biological recommendations and the elements to “keep” or “add” as references, two small groups compiled new “collage” models of each tool (Appendix B and C). In addition, insights from the subsequent discussions provided some recommendations for the implementation of both ordinances (section 3.2.1) as well as specific issues for adoption and implementation of CD and overlay districts (sections 3.2.1.1. and 3.2.1.2. respectively). These contributions will assist the future process for drafting final model ordinances. These drafts could provide a starting point for new model ordinances that are targeted to the conservation needs of rural communities in the Northeastern U.S.

Table 4. Biological recommendations (top row) for workshop participants to review and suggested modifications (below) to improve their applicability for local municipalities in the northeastern U.S.

<i>Biological Consultation:</i> Require consultation with a biological expert, natural resources management agency and/or conservation organization on development design, construction, and stewardship decisions. In jurisdictions where a conservation plan has been adopted, require development decisions to conform to the plan.	<i>Ecological Site Analysis:</i> Require an ecological site analysis to inventory and map biophysical resources on a development property and provide a baseline for long-term monitoring and stewardship.	<i>Clustering:</i> Allow, encourage, or require clustering of housing on a development property.	<i>Open Space:</i> Provide standards for the amount, location, configuration, and stewardship of protected open space on a development property.	<i>Stewardship & Education:</i> Require a plan for active stewardship of ecological resources and monitoring of conservation outcomes that educates and engages the residents of a development property.
<ul style="list-style-type: none"> • Require consultation with appropriate biological experts (e.g., professional biologists, ecologists, or conservation scientists) in the ecological site analysis, design of protected lands, design of developed areas, site preparation and construction, and stewardship and monitoring of protected lands. • The consulting individuals or agencies should be involved from the start of the project, beginning with site selection. • The consulting individuals or agencies should be independent of the development process (i.e., not employed by the developer). • The consulting individuals or agencies should conduct or review the ecological site analysis and participate in the design of the protected lands and developed areas. • The consulting individuals or agencies should advise the project's construction manager during site preparation and construction of buildings and infrastructure. • The consulting individuals or agencies should develop, review, and/or implement the plan for long-term stewardship of the property. 	<ul style="list-style-type: none"> • The ecological site analysis should be a collaborative process involving the developer, planner, biologists, and other relevant local experts. • The ecological site analysis should be completed prior to the design of the developed area. • The ecological site analysis should make use of local or regional databases of physical features, habitat elements, species occurrences, ecological processes, and other biophysical resources. • The ecological site analysis should include spatially-explicit mapping and ranking of the most ecologically valuable areas of the property. • The ecological site analysis should consider the landscape context of the property, including existing human infrastructure and nearby protected lands. • The ecological site analysis should account for temporal variation in the biophysical resources of the property across seasons and years. • The ecological site analysis should quantify the potential impacts of alternative design scenarios, in terms of both immediate and long-term impacts. 	<ul style="list-style-type: none"> • Clusters of housing and associated infrastructure should be located on the least ecologically valuable areas of the property and/or on areas that have been previously altered or degraded. • Clusters of housing should be located at the edge of the property and near existing development on adjacent properties. • The development footprint of housing clusters and associated infrastructure should be minimized. • The edge-to-area ratio of housing clusters should be minimized, and "linear clusters" should not be permitted. • Within clusters, home sites should be located close enough together such that their disturbance zones overlap. • The density of housing clusters should be reduced near ecologically sensitive areas of the property. • Buffer areas should be established between housing clusters and adjacent open space. 	<ul style="list-style-type: none"> • Open space design should be a collaborative process involving developers, planners, and the individual or organization that will eventually own and/or manage the protected open space. • Open space should be located in the most ecologically valuable areas of the property. • Open space area calculation should include developable land (i.e., land that is not otherwise legally restricted from development). • Open space should be configured in one or very few large, contiguous parcels rather than many small parcels. • Open space should be located near existing protected lands or undeveloped private lands on adjacent properties to maximize connectivity for wildlife movement and ecological processes. • The edge-to-area ratio of open space parcels should be minimized to increase core habitat area and reduce negative edge effects from adjacent developed areas (i.e., avoid narrow strips of open space). • Setbacks and vegetative buffers should be maintained or created along water features and other ecologically sensitive areas of open space, especially near developed areas. • Fragmentation of open space by roads, trails, fences, lighting, and other human infrastructure should be minimized. • Ecological restoration of degraded areas should be allowed, encouraged, or incentivized. • Open space should be held in common ownership, and to the extent possible, stewardship activities should be coordinated with owners of adjacent properties. 	<ul style="list-style-type: none"> • A plan for stewardship and monitoring should be linked directly to the results of the ecological site assessment and conservation objectives of the development project. • The stewardship and monitoring plan should provide guidelines for management of private residential lots as well as for common open space. • The stewardship and monitoring plan should specify permitted and prohibited human land uses in the protected open space. • The stewardship and monitoring plan should provide guidelines for recommended management and restoration activities in the protected open space. • Stewardship and monitoring activities should be coordinated with activities on adjacent development properties and/or nearby protected lands. • The stewardship plan should be adaptive, with a process for adjusting resident and/or open space management practices in response to monitoring results. • The plan should identify lead individual(s) or organization(s) to coordinate stewardship, monitoring, and education activities. • The plan should include strategies for actively engaging residents in stewardship and monitoring activities and providing educational information to residents. • A reliable funding source should be identified and dedicated to support ongoing stewardship, monitoring, and education activities.

3.2.1. Small Group Discussions

The small groups employed various strategies for reviewing and incorporating materials from the examples of CD and overlay ordinances provided. In some cases, participants highlighted important elements to incorporate, and in other places they noted the need for additional detail (e.g., definitions). All participants agreed that the keep, drop, and add elements must be considered explicitly as important outcomes of the workshop process and incorporated in future drafts of model ordinances. Some groups explicitly considered the keep, drop, and add elements, whereas others assumed that information would be carried forward into the next phase of drafting a model ordinance.

Participants made several general points that are applicable to both CD and overlay districts as well as other tools. These points include:

- Recognize weaknesses within an ordinance (e.g., the expectation that Homeowner Associations [HOA] will manage protected open space). Be explicit that if a community includes a requirement, the requirement needs to be self-sufficient and needs to have the legal mechanisms in place to execute it.
- Ensure the authority and applicability sections of the ordinance clearly indicate statutory authority as well as mitigation options and exemptions.
- Consider whether to require more stringent standards for larger projects. For example, a larger property or greater development yield might trigger stricter regulations or a more intense ecological site analysis.
- Identify clearly the relevant materials that an applicant would need to have and specify the process the applicant would need to follow in order to apply for a development permit using one of the land-use tools. These requirements should be encompassed within in the language of the tool.
- Ensure that a conservation commission or other conservation entity, where they exist, has some authority in land-use decisions, as a means to minimize the excessive discretionary power of town planning boards in decisions involving conservation planning.
- Verify that ordinances follow from and adequately represent the relevant elements of the community's comprehensive plan.

3.2.1.1. Conservation Development

For the composite CD ordinance (Appendix B), both small groups adapted most of the structure and content from the Model Conservation Subdivision Ordinance from New Hampshire. Several points that they raised for further consideration included thoughts about where CD should (and should not) be used and how it should relate to other development options:

- Use CD ideally across the whole community as an initial approach to deciding where development should go and deciding what benefits the community seeks from conservation of certain areas or features. This process may need to include maps of what to protect as well as maps of where to develop.

- Implement the mapping and planning for CD through an overlay process.
- Provide clarity on what a CD is and where should it apply in a general sense. It should not be applied everywhere. Consider creating a decision tree to help decision makers look at the data to date and decide whether or not such a tool will be useful. Related to this, ordinances could be written such that CD is the default approach and conventional design is a special use.

The workshop participants also made several recommendations related to the definition, design, and ownership of protected open space in a CD ordinance:

- Improve definitions of open space, including clear specifications on what activities can and what activities cannot occur there.
- Calculate densities and yields by first removing unbuildable land.
- Use resource evaluations, particularly the ecological site review, combined with a preliminary sketch as a starting point for discussions related to the Application and Review process. The pre-application process is essential in order to make this process successful.
- Articulate steps for the ecological site analysis: A level 1 review is a desktop analysis of existing data including a wetland delineation and evidence of existing important natural features. Communities can clearly state which resources to use in this process. Clearly define conditions of the level 1 review in the ordinance that would trigger a level 2 review – hiring a biological consultant. The triggers might include evidence of rare or endangered species, certain percentage of rare habitat, archeological evidence, natural heritage data, etc.
- Retain someone, (e.g., state wildlife biologist, biological consultant, cooperative extension) to review the work of consultants paid by the developer to conduct ecological site analysis.
- Define technical or ambiguous terms such as “high quality habitat,” “ecological function,” or “ill-suited for development.”
- Ensure the building envelopes are designed only after the ecological site analysis is complete.
- Clarify who owns the open space and specify that the town or citizens of the town have authority to enforce management of the open space in the event of problems.
- Provide ownership options for open space based on what the community hopes to gain by conserving a particular parcel.

Finally, the participants offered the following feedback on the model ordinance and “strong” examples of local ordinances that we provided for this exercise:

- The Model Conservation Subdivision Ordinance from New Hampshire provided the main guide, specifically the objectives, ecological resilience, and resource analysis sections.
- The example ordinances from Elmore, Vermont and Newry, Maine provided informative development standards, including the categories of development standards that should be

included, how to calculate the ecological impact zone, and specific guidelines for shared infrastructure, buffers on water bodies, and what should not to be included in open space.

Table 5. Conservation Development: Keep, Drop, Add Exercise

Keep	Drop	Add
Clear, concrete objectives and/or 'siting principles'. Code enforcement officer may not understand why the regulation is in place	Cluster is "encouraged" not "required"; replace with required if unable to make a CD produce written justification why not	Annual monitoring and education component to open space
Include working forests and agricultural uses within commitment to continue uses under a plan; may cross proposed boundaries	Community gardens, village greens, and playgrounds are developments, not open space and should not be counted as open space	Identification of resources of primary and secondary importance that are "no build" and avoidance areas respectively. Then design house sites, lots.
Contiguity requirement for open space; fragmented space requires higher percent of lot than contiguous	HOA of open space but allow aspects of common use	Map of priority habitats
Have some approval from conservation or other natural resource board required for open space designation	Conflicts between landowner aesthetics and the actual ecological values we are trying to preserve; orientation/flexibility for scenic vistas	Room for adaptive management (new data, climate change, etc.)
Resource analysis before sketch plan is essential; having standards is even better	Blanket exemptions, we need flexibility in both directions	Stepwise process for doing resource analysis for a site; keep focus on sites that require it
Consistency with higher level plans; town plan, state wildlife action plan, etc.	Deed restrictions tend to get forgotten; they are not sufficient for conservation in perpetuity	Designate local groups for open space management
Specific standards to help operationalize the ordinance (Elmore, VT)	Requirement of specific percent of open space number can be problematic; build in flexibility to by linking to conservation values and analysis (NH example)	Removing HOA from open space management or adding supervision by the planning board or some other authority to ensure open space is managed and cared for
Improve calculation of buildable acreage by including non-buildable/prohibited areas specified in local, state, or federal regulations (NH model ordinance)	Allowance of open space to be any area that is outside the development envelope; we know that the area around a development is impacted	Biological analysis more conventional CD approach
Follow the town comprehensive plan; if it's not in the town plan you can't do it so the town plan might need to change with the regulations; town plan provides legal basis for the regulations	Reconsider exemptions of large lot sizes; risk of fragmentation and sprawl	Require pre-proposal meeting with the planning board that includes a biological expert
Sketch plan requirement so that we can keep things in mind during or before the engineering/construction process	Remove "roads" as a buffer type; reconsider role of buffers in maintaining connectivity and integrity	Prevent development in core conservation areas to prevent fragmentation
Notes directly on plan about open space location, use, ownership, and management (Newry, ME)	Open space within an individual house lot	Improve calculation of buildable acreage by including other non-buildable/prohibited areas or federal regulations (see NH)
Flexibility in preservation options; use conservation easements for lands of conservation value only	No building in 100 year floodplain; should be no building in the 500 year floodplain (climate change)	Make stewardship of open space mandatory
CD should as easy and cost effective to permit as a traditional subdivision designs		Incentives for abutting open space in the subdivision to other open spaces to help with connectivity
Illustrations and visual examples; words get dense		Alternative to commonly held open space if the relevant functions are protected in other ways
Allow conventional development by a special permit (NH model ordinance)		Step-wise resource analysis required
		Define and provide guidelines for identifying the most valuable natural resources while also leaving room for town-specific values (recreation) or emerging data (climate change)
		More emphasis on sketch plan as a requirement if within sensitivity resource area identified in the comprehensive plan
		State or regional natural resources agency as acceptable/suggested open space ownership/stewardship
		Clearly and completely defined terms related to allowable uses open space requirement buildable area
		Identification of resources of primary and secondary importance that are "no build" and avoidance areas respectively; then design house sites, lots.
		Funding for stewardship should be mandatory
		Keep it simple; makes it easier for implementation

3.2.1.2. Overlay District

For the composite overlay district ordinances (Appendix C), the small groups drew content from a combination of the Model Natural Resources Conservation Ordinance from North Carolina and the Smart Growth Overlay District from Brunswick, Maine, with additional reference to the Metropolitan Conservation Alliance model ordinance contributed by a workshop participant.

One point that both groups highlighted as critical for successful implementation of an overlay district ordinance is the process for developing an overlay map in the first place, and then making sure the map is an official part of the ordinance. They made several specific recommendations regarding this point:

- Decide whether the map covers one municipality or, ideally, includes a larger area with adjacent communities in order to facilitate a landscape approach to conservation.
- Create a flexible map—for example, a map that allows the ability to add new conservation areas, but not necessarily delete areas.
- Include definitions for technical terms as well as for specific habitat types depicted on the map and a clear explanation of the need to encourage ecological connectivity, resilience, and natural ecosystem processes, especially in areas with special habitats such as wetlands.
- Provide lots of illustrations to accompany the map that clearly depict important points and embed illustrations within the narrative parts of the ordinance.

Discussions in both small groups then focused on the process that occurs once someone proposes to build within an overlay district, and the workshop participants offered the following recommendations:

- Articulate the process clearly in the Application section of the ordinance.
- Ideally, require applicants proposing to build within an overlay district to use CD as well as integrated site and ecological design when building within an overlay district.
- Subject applicants and subsequent owners within an overlay district to standards that benefit forest and wildlife management during the construction process, and to the extent feasible, for long-term management of a parcel.
- Make management conditions explicit in the ordinance and relate them to the overall purpose of the overlay district.
- Require a site walk and a review of habitats and resources for all projects sited within an Overlay District.
- Ensure the building placement is outside of the overlay district if possible (i.e., if the parcel is large and only partially located in the overlay district) and is as close as possible to existing development; this could potentially be accomplished with incentives to encourage development within the ecological impact zone of existing infrastructure. Also, ensure that the site design maximizes the connectivity with adjacent open spaces and important habitats, minimizes driveway length, and provides generous buffers on wetlands.

The workshop participants addressed the particular challenge presented by the development of single family homes, as opposed to planned subdivisions. Cumulatively, single family homes, in addition to

approved subdivisions, can lead to significant fragmentation of habitats at landscape level. The small groups recognized that any ordinance needed to respect the rights of individual landowners, but also that standard exemptions for single family homes represent a major loophole in existing ordinances. While this topic needs further examination, some preliminary recommendations include:

- Give clear instructions for how to develop within an overlay zone and make it applicable to single family homes as well as subdivisions.
- Provide incentives to develop single family homes inside the ecological impact zone of adjacent developments.
- Limit the building envelope.
- Walk sites with an applicant and appropriate biological authority to identify important features and explain the overall intent of the community and the overlay district.

Finally, the participants offered the following feedback on the model ordinance and “strong” examples of local ordinances that we provided for this exercise:

- The North Carolina and Metropolitan Conservation Alliance model ordinances provide strong Findings of Fact sections.
- The Model Natural Resources Conservation Ordinance from North Carolina provides strong standards for single family houses, which may be difficult for single-family homeowners to achieve, but these standards should include monitoring performance standards.
- Brunswick, Maine has specific guidance for reducing burden on single family homeowners and is clear on who makes decisions and how.
- Brunswick, Maine also has a provision where the corridor under an overlay district can shrink as landowners can opt to buy into a mitigation bank, which is very undesirable for conservation.

Table 6. Overlay District: Keep, Drop, Add Exercise

Keep	Drop	Add
Wildlife corridors need more delineation could improvements or enhancements be appropriate for mitigation	The Elmore, Milford, and Jericho examples are misfits; not good examples	Clearer and more detailed standards for single-family dwelling units
Outline areas of high resource value and explain where the maps or resources came from and how they were derived	Need for a requirement for a conservation plan as opposed to just an analysis; seems not correct to put this here	Keep overlay district to minimum essential putting everything in an overlay means the overlay district loses its significance
Protect uplands, lowlands, and diversity	Exemption for PUDs whereby 20% of wildlife habitat can be developed if there is no other practical possibility; this is an easy way out – too easy	Specifics about the sources of natural resource mapping; states have the authority to manage and plan for wildlife and so the town should agree with the state
Specific list of habitats features to be included in site survey	The ‘floating’ design in the Jericho example isn’t great; using buffers what would make more sense; this is more unpredictable; talking about very discrete patches and not really a complete, connected overlay; what is the utility?	Clarify definitions of terms used in the regulations
NC model and MCA model are good examples		More specifics about stream crossings; bank width and stream smart design
Clear standard for when roads and utilities can be run through a conservation area (NC examples)		Conservation commission should have some review authority
National heritage sites and significant natural communities are listed; however, sites of local significance are important even if they aren’t important at the state scale		Fences should not impede wildlife movement in areas of wildlife significance
Could decrease buffer/floodplain protection if you can prove that it is above flood elevation; an out but a difficult one		Increase 100 year floodplain to 500 year floodplain; these are new federal standards; add increased protection of buffers – larger in size (Jericho, VT)
Runoff mitigation is important because with an overlay district development/houses might be ‘plopped’ down in the middle of the overlay		Federal floodplain standard 100 year floodplain + 2 freeboard or 500 year floodplain
Overlay does assumes that you have something of designated value to overlay; there is a whole process of mapping and identifying important areas that takes place in the development of the overlay this process doesn’t necessarily need to be stated or talked about in the regulation itself		Construction standards; low impact development standards; design standards for single-family homes
How to deal with/enforce commitments that are stated (30 years in Brunswick, ME)		Even if only a building permit, requires review but change: conservation commission should have review authority too
Reference to other reporting standards instead of creating a new list in rule single; common requirements document; make regulation document more manageable (Tucson, AZ)		Stepwise process standards for resource mapping and updating at regular intervals
Invasive species references and natural resource plan development by a qualified biologist (NC)		To findings of fact; facts regarding necessity of “other” land uses too – agriculture water quality, forestry, recreation, floodplain basins
Findings of fact; sets up common ground which is helpful (NC)		Address greater detail to pre-existing agriculture and forestry uses and their expansions
Final natural resources plan and subdivision plan be approved in tandem so they are coordinated		Findings of fact create neutral/common ground regarding what society needs as opposed to what is “taken” from the developer
National heritage sites and significant natural communities are listed; however, sites of local significance are important even if they aren’t important at the state scale		

3.3. Emerging Network of Practitioners

The authority to make decisions about how to develop and steward private lands is a highly decentralized activity that rests almost entirely with counties, towns, and individuals and occurs at a very local level. Altering that process or ensuring that certain information is considered within that process requires working closely with discrete local government entities. The process can be time-consuming, especially as election cycles and appointment processes bring new people into the decision-making process at regular intervals and these individuals need time to learn the land-use system and understand the potential consequences of proposed changes.

As guidelines, recommendations, or model ordinances continue to be refined, through opportunities such as the NALCC Science Delivery program, a community of practitioners would provide an effective means for sharing information and coordinating decisions among counties, towns, and individuals. By convening the workshop, we began to build a network of practitioners working at the interface of private land conservation and land-use planning, who emerged with a shared understanding of how land-use planning tools and incentives could be improved to protect wildlife habitat and other natural resources on private lands. Ideally, the network could eventually provide a platform (such as an interactive online presence or periodic face-to-face workshops and meetings) in which to share experiences and learn from one another the skills and techniques best suited for translating conservation science recommendations into local land-use practices.

DISCUSSION

The workshop discussions demonstrate that even minor improvements to CD and overlay district ordinances could facilitate better outcomes for conservation. Moreover, using the two tools together could yield a more comprehensive approach to protecting wildlife habitats and other natural resources on private lands. To effectively implement ordinances with improved outcomes for conservation, local planning jurisdictions need access to current information on the natural resources in their communities and technical expertise to help them interpret that information. They also may require community engagement that involves citizens and elected officials working together to adopt and amend the planning tools that will best enable them to achieve their communities' objectives.

The workshop participants emphasized that overlay districts are flexible enough to protect natural resources and direct development patterns at landscape scales, or to ensure that houses are placed in the most optimal locations to buffer sensitive natural resources on smaller parcels. In addition, the maps and development standards associated with overlay district ordinances provide transparency and consistency for homeowners and developers. Communities can designate several overlay districts with varying levels of protection, and they can also be used in inter-governmental agreements to identify and protect natural resources across municipal boundaries. However, as land-use planning and conservation practitioners, we must recognize that some overlay districts—for example, those designed to protect scenic resources—may not explicitly address wildlife or habitat needs. One alternative may be to specifically encourage the adoption of conservation overlay districts, which can empower local communities to guide future development by identifying natural resources to protect, generating maps of the distribution of natural resources in the community, and then creating a process for developing

land within these special districts. Developing an overlay district map also provides an opportunity to educate and involve citizens in the process of identifying important resources (e.g., via citizen science or participatory mapping).

Similar to overlay districts, many CD ordinances or development projects focus on objectives other than protecting wildlife species and habitats, such as conserving scenic, agricultural, working forests, or other economic values. However, the workshop participants suggested creating a model for CD that is limited to conservation of natural resources or biodiversity. In addition, they suggested that implementation of CD ordinances would benefit from involving individuals in the process who are familiar with CD in practice and are well-versed in principles of conservation planning generally. This expertise would enable more effective local reviews of development proposals, including results of the ecological site analysis or information regarding natural resources that occur on a piece of property, and the ability to work with the developer to integrate those findings into the application process.

As a site-level planning tool, implementing CD ordinances can be ad hoc, without an overarching structure. As a result, CD may be used at limited scales or only when convenient, and not targeted for use where the greatest conservation need exists. To address this challenge, the workshop participants noted that overlay districts could provide a legal landscape-level framework for the application of other, site-level conservation planning tools, such as CD, TDR, or low-impact development. However, to date there is limited evidence documenting the effectiveness of using these two tools in tandem within one community.

Effective improvements to these ordinances will depend on communities' ability to access information to make informed decisions about what natural resources to protect and where those resources occur in their jurisdictions. The NALCC has taken the unprecedented step of collaborating on a number of efforts to produce hundreds of landscape-scale datasets for the 13-state region which stretches from Virginia to Maine (nalcc.databasin.org). We shared with the workshop participants several examples of relevant NALCC datasets that can be used for reviewing the natural resources within a community in the Northeastern U.S. The NALCC datasets complement other state and local information by offering insight on how a community's resources compare to those of other nearby communities, across a single state, and across the NALCC region. Our associated final report to NALCC describes our efforts to create an online resource for New York State through NALCC's Conservation Planning Atlas on Databasin (Kretser et al. 2016).

Comments from the workshop participants echoed those we hear frequently in our work with local communities: the maps are great and informative, but communities need a technical expert to produce maps for them and help them to interpret the maps in order to prioritize natural resources and areas within the communities for conservation action. All agreed that face-to-face interaction with technical experts will be a critical aspect of delivering maps and data to communities. Furthermore, the maps will be very important and informative for helping people understand the value of the habitats within a community and the unique attributes that are worth protecting within the region.

Adopting or updating local land-use planning tools to incorporate the best available conservation science will also require social processes for raising awareness and involving citizens. We recommend a stepwise process for engaging communities across the northeastern U.S.:

1. Identify those communities whose natural resources are most at risk from development;
2. Determine which land-use planning tools are already available to the community;
3. Work with the community to raise awareness of the need for conservation;
4. Identify individuals within the community who can champion change; and
5. Provide resources, including model ordinances, natural resources data, and technical expertise, to implement those changes.

Understanding the impacts that land development has on wildlife species, their habitats, and ecological processes, as well as a range of possible solutions, is important for communities that are interested in planning for growth, open space, and conservation. Public education on conservation should emphasize the importance of larger-scale thinking—for example, the collection of discrete parcels that make up an important wildlife corridor, or the cumulative impacts that occur as more and more subdivisions and single-family homes are developed across the landscape. With this information in hand, communities can collaborate with consultants or other technical experts to review the best tools to achieve their desired outcomes. Most important is empowering community leaders and citizens to make decisions about the future of their lands and utilizing easily accessible information to assist in this process. If citizens support the adoption or revision of a planning tool, they can ensure that the tool is used appropriately to conserve important natural resources. While all of the workshop participants recognized that, for some natural resources that are extremely threatened, other forms of protection (e.g., regulation) may be needed, they emphasized the importance of creating a process that communities can invest in order to ensure that conservation will be a long-lasting process.

Table 7. Important Summary Points from Results and Discussion

- Provide technical expertise for producing and interpreting natural resources maps to help communities prioritize conservation action.
 - Give ordinances a specific conservation designation (e.g., Conservation Overlay District or CD for Biodiversity) to inspire a process for identifying natural resources.
 - Use overlay districts as a legal framework for the application of other, site-level conservation planning tools (e.g., CD, TDR).
 - Ensure authority and applicability sections of the ordinance clearly indicate statutory authority, mitigation options, and exemptions.
 - Make ordinance requirements self-sufficient, with legal mechanisms to execute them.
 - Consider more stringent standards for larger projects.
 - Specify in the ordinance any relevant materials and process for applicants to follow to obtain a development permit.
 - Minimize excessive discretionary power of town boards over conservation planning by ensuring a conservation entity (e.g. commission) has some authority in land-use decisions.
 - Verify that ordinances follow from and adequately represent the relevant elements of the community's comprehensive plan.
 - Incorporate recommendations for CD and overlay districts into model ordinances (pages 19-24 and Tables 5 and 6).
 - Empower community leaders and citizens to make decisions about the future of their lands through a step-wise social process that involves identifying communities with important natural resources, working with communities to assess the available land-use tools, and providing adequate resources to implement change and achieve conservation outcomes (page 28).
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4. CONCLUSION AND NEXT STEPS

The rapid conversion of private land to residential development and limited funding for conservation make this a critical time to implement innovative policies and incentives for integrating conservation science with land-use planning and development. An important priority is the application of current science to inform the design and application of land-use planning tools to improve the development and stewardship of private lands. Our work has demonstrated that many communities in the northeastern U.S. have tools available for minimizing the impacts of development on private lands. Although these tools are disproportionately found in more populous and urbanized areas, they can serve as examples for the more resource-rich rural regions that are just beginning to experience the impacts of low-density development. With minor modifications, CD and overlay districts are two tools that could improve the ability of rural communities to protect species and habitats of greatest conservation concern. Used together, these two tools could empower communities to work with developers and landowners to design future uses of the land that maintain the health and well-being of both natural and human communities. However, developing final model ordinances suitable for distribution would require the participation of land-use planners and legal experts who can review the comments and ideas generated at the meeting and adapt them to technical land-use code language.

This report synthesizes the work we conducted under a science delivery grant from the North Atlantic Landscape Conservation Cooperative (NALCC). It provides resources and a clear plan for developing model ordinances that incorporate current science and recommendations for implementation. This work not only will benefit communities across the NALCC region, but also beyond, as towns and counties across the nation struggle with the impacts of land-use change on natural resources.

We recommend the following important next steps, to ensure that results of this NALCC science delivery project will continue to generate conservation successes on private lands:

1. Finalize model ordinances for CD and overlay districts based on the information compiled in this report and disseminate the models to communities in the Northeastern region. This requires hiring a consultant, such as a land-use lawyer or code writer, to translate the drafts generated by the workshop participants into code language suitable for adoption into town regulations.
2. Organize follow-up workshop(s) in the Northeastern region to focus on additional land-use planning tools identified by the workshop participants but not discussed due to time constraints. These critical topics include TDR and planning strategies for addressing the uncoordinated single-family home development that is common across the northeastern U.S.
3. Work with towns in the northeastern U.S. that have high conservation value (i.e., according to NALCC datasets), face population growth and development, and have good opportunities to improve planning tools (i.e., have existing land-use planning tools available for revision), to implement changes using information provided in this report.
4. Initiate a science delivery approach in which science-based guidelines for land-use planning and stewardship be synthesized and distributed to a network of conservation practitioners who then can work with communities to integrate the recommendations into local planning decisions.

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APPENDIX A.

Agenda

Workshop on Land-Use Planning Tools for Conservation
Lake Morey Resort, Vermont
December 2-4, 2015

Wednesday, December 2nd

- 3:00-5:00 pm Participants arrive and check-in
- 5:00 pm Happy hour and introductions
- 6:00 pm Dinner
- 7:00 pm Presentations on workshop context
 - Importance of land-use planning for wildlife conservation
 - Guidelines and incentives for conservation development in local land-use regulations
 - Biological recommendations for residential design and stewardship guidelines

Thursday, December 3rd

- 7:30-8:30 am Breakfast
- 8:30 am Introduction and workshop resources
 - Review workshop goal and meeting agenda
GOAL: Review existing land-use planning tools and collaboratively generate suggested revisions and improvements to enhance wildlife conservation opportunities.
 - Introduce selected tools and examples
- 9:30 am Discussion of biologists' recommendations
- 11:30 am Discussion of tool #1 (Conservation Development)
- 12:30 pm Lunch
- 1:30 pm Discussion of tool #1, Continued (Conservation Development)
- 4:00 pm Discussion of tool #2 (Overlay District)
- 6:30 pm Happy hour
- 7:00 pm Dinner

Friday, December 4th

- 7:30-8:30 am Breakfast
- 8:30 am Recap from the previous day/Discussion of tool#2, Continued (Overlay District)
- 10:30 am Next steps for implementation
 - NALCC data delivery for local land-use planning
 - Implementation discussion
- 12:00 pm Summary and closing
- 12:30 pm Lunch and depart

APPENDIX B. Conservation Development Composite

Example 1

ASSUMPTIONS

We understand that many values maybe included in conservation subdivisions, but we are focusing on environmental values here.

Concern: Need to consider how wildlife conservation subdivision will incorporate other community and development concerns.

I. PURPOSE

This conservation subdivisions ordinance is intended to encourage environmentally sound planning to conserve open space to retain and protect important wildlife habitat and ecological resiliency and provide for efficient use of land and community services to advance the goals stated in the master plan.

- Define Open Space
- Assumption is part of purpose (other values need to be considered for implementation)

II. OBJECTIVES

- To preserve those areas of the site that have the highest ecological values, including, for example, wildlife habitat, e.g. large unfragmented blocks of undeveloped land, areas of highest condition identified state and regional action plan or municipal natural resources inventory, and water resources, watersheds, wetlands, streams and rivers.
- To locate buildings and structures on those portions of the site that are the most appropriate for development and avoiding developing in areas ill-suited for development, including, for example, areas with poor soil conditions, a high water table, that are subject to frequent flooding or that have excessively steep slopes.
- To create a contiguous network of ecological important land by linking habitats within the subdivisions to habitat on adjoining lands wherever possible.
- To reduce the impacts on water resources by minimizing land disturbance and the creation of impervious surfaces and stormwater runoff.
- To reduce the amount of roads, sidewalks, and stormwater management structures that must be built and maintained.
- To minimize the impact of residential development on the municipality, neighboring properties, and the natural environment.
- Maximize ecological connectivity
- Core habitats protection – keep development out of core habitat s – through zooming.
- Unfragmentated forests
- State and regional plan and local.

Definitions (to define)

Example 2

I. PURPOSE

This Conservation Subdivision ordinance is intended to encourage environmentally sound planning to conserve open space, retain and protect important natural and cultural features, and provide for efficient use of land and community services to advance the goals stated in the master plan.

II. OBJECTIVES

- To maintain rural character, preserving farmland, forests and maintaining rural viewsapes.
- To preserve those areas of the site that have the highest ecological value, including, for example, wildlife habitat, e.g., large unfragmented blocks of undeveloped land, areas of high priority resources based State, Federal and Other Wildlife Action Plans, and water resources, e.g., drinking water supply areas and watersheds, wetlands, streams and rivers.
- To locate buildings and structures on those portions of the site that are the most appropriate for development and avoiding developing in areas ill-suited for development, including, for example, areas with poor soil conditions, a high water table, that are subject to frequent flooding or that have excessively steep slopes.
- To create a contiguous network of open spaces or “greenways” by linking the common open spaces within the subdivision and to open space on adjoining lands wherever possible.
- To reduce the impacts on water resources by minimizing land disturbance and the creation of impervious surfaces and stormwater runoff.
- To reduce the amount of roads, sidewalks, and stormwater management structures that must be built and maintained.

- a. Designated open space (wildlife conservation areas)
- b. Buffer
- c. Habitat
- d. Wildlife Conservation Society building envelope
- e. Ecological footprint – ecological effect zone
- f. High value habitat/core habitat

AUTHORITY AND APPLICABILITY

- a. Thresholds – what triggers
 - i. Size of development, parcel
 - ii. Ecological importance
 - iii. Critical environmental area
- b. Conservation Development is the standard, primary form.

The model ordinance is written to encourage the use of conservation design subdivisions, but to allow the planning board to entertain a conventional development plan under a special permit or conditional use process (rather than seeking a variance from the Zoning Board of Adjustment). Under this approach, the use of the conventional subdivision design is subject to an additional review and approval step by the planning board, making it somewhat more difficult for the applicant to pursue conventional subdivision design.

A community can also require the use of conservation subdivision design for specific areas or situations, such as specific zoning districts or on any parcel with high natural resource value (e.g., on parcels containing rare or outstanding habitat features, buffer areas to wetlands, streams, rivers, ponds, and lakes, etc.).

Authorization to Issue a Special Use Permit: Notwithstanding other provisions of (municipality)'s zoning ordinance, authority is hereby granted to the planning board, as allowed under RSA 674:21, II, to issue a special use permit to modify the requirements of this section as follows:

1. The planning board may issue a special use permit for the parcel to be developed as a conventional subdivision when it finds that:
 - a. The parcel is ill-suited for development using conservation subdivision design, or a conventional design provides greater or equal benefits to the community; and
 - b. The conventional subdivision design retains and protects important natural and/or cultural features identified by the planning board and/or the site inventory.
2. The planning board may issue a special use permit for a modified conservation subdivision design to allow for variations from certain requirements of this section as specified herein. Such modifications shall be consistent with the purposes and

AUTHORITY & APPLICABILITY

- A. To facilitate the implementation of the goals of the master plan, all subdivisions for residential use shall use a conservation subdivision design approach, unless exempted under Section IV.B or granted a special use permit under Section IV.C.
- B. Exemptions: Subdivisions meeting any one of the following criteria shall be exempt from the requirements of this section, unless a landowner elects to follow the standards of this section.
 1. The planning board may issue a special use permit for the parcel to be developed as a conventional subdivision when it finds that:
 - a. The parcel is ill-suited for development using conservation subdivision design, or a conventional design provides greater or equal benefits to the community; and
 - b. The conventional subdivision design retains and protects important natural and/or cultural features identified by the planning board and/or the site inventory.
 2. The planning board may issue a special use permit for a modified conservation subdivision design to allow for variations from certain requirements of this section as specified herein. Such modifications shall be consistent with the purposes and standards of this section, fall within the guidelines contained herein, and shall not be detrimental to public health, safety or welfare.
 3. ***If a subdivision is exempt then developer may still need to do some sort of conservation mitigation.***
- C. Authorization to Issue a Special Use Permit: Notwithstanding other provisions of (municipality)'s zoning ordinance, authority is hereby granted to the planning board, as allowed under RSA 674:21, II, to issue a special use permit to modify the requirements of this section as follows:
- D. Sequential Subdivisions: The provisions of this ordinance shall apply to the sequenced development of a parent parcel over time through separate successive applications. When a subdivision is proposed that involves part of a larger parcel or includes lots that are capable of further subdivision, the planning board may require

standards of this section, fall within the guidelines contained herein, and shall not be detrimental to public health, safety or welfare.

Density Calculations/Yields

- Remove unbuildable land (steep slopes 15-20%+), field delineation of wetlands
- Open water
- Use underlying zone

APPLICATION AND REVIEW

Conservation Analysis / Resource Analysis

At the beginning of the process

Purpose: resource analysis and preliminary identification of those areas of the site with the most significant conservation value based on the assessment of the site.

Level 1.

Query Natural Heritage Program

Local, regional, and state focus areas

The major natural features of the site and within 500 feet of the site, including wetlands, vernal pools, streams, ponds, rivers, riparian areas, floodplains, stratified drift aquifers, areas of significant wildlife habitat (habitats of endangered or threatened wildlife, other habitats of local significance as identified by the conservation commission or other conservation organization), mast stands, boundary trees, noteworthy tree specimens, scenic views or areas, significant geologic features, ridgelines, slopes in excess of 25 percent, agricultural soils of local and statewide significance, high quality

Municipalities should review their current standards and requirements for site maps and site information and provide consistency between the preliminary review and formal application materials. forest soils, meadows, and any other important natural features. Wetlands on the site shall be identified and delineated by a Certified Wetlands Scientist and certified by the person performing the delineation. Information on adjacent properties may be from published sources and available state, regional, and local data.

****Really important to consider offsite areas – landscape level****

Soils on the site based on a soil survey. The planning board may require the submission of a high intensity soil survey if it determines that a HISS is necessary to determine if the proposed density of development conforms to the zoning requirements or to evaluate the appropriate use of the property.

Vegetative cover conditions on the property.

Watershed and subwatershed boundaries.

that a site inventory and a conceptual (non-binding) long-range plan be submitted for the entire parcel and used to evaluate the proposed subdivision.

APPLICATION AND REVIEW

- Resource Evaluation
- Preliminary sketch plan/pre-application meeting
 - Include resource agencies/consultants
 - Available for public comment
- Sketch plan revision and approval
- Application submission
- Public and agency Comments
- Approval with conditions
- Sketch plan should include consult with biological expert on uses for open space

There are TWO LEVELS of Review Possible

- Ecological Review if ordinance is only in Natural Resources Rich Districts
- Ecological Review if ordinance is Town Wide
 - Ready made online data sets

F1 Level Shows = “resources of significant values” what is the trigger to have more field based analysis (biological consultation)

Applicants shall demonstrate that their conceptual plan is consistent with the following approach for designing a subdivision:

- a. Step One: Identify Conservation Areas. Identify those areas of the parcel containing or supporting important natural resource features and functions, as listed in the subdivision regulations or otherwise identified by the planning board for priority consideration for inclusion within the designated open space. If not included in the designated open space, other protective mechanisms, such as a substantial setback of development or maintenance of an undisturbed buffer around the feature, shall be identified.
- b. Step Two: Locate House Sites and Building Envelopes. To the maximum extent feasible, house sites and building envelopes shall be located outside of those areas delineated in Step One. The location of the house sites and building envelopes shall also reflect the design objectives identified elsewhere.
- c. Step Three: Align Streets and Trails. The minimum length and network of streets necessary to access each house lot shall be identified, subject to the road standards of the Town and with consideration given to conforming the street to the natural landscape. Proposed trails shall be identified where access to the designated open space is appropriate and/or to provide for pedestrian circulation within the development as well as pedestrian access to areas outside the development.
- d. Step Four: Identify Lot Lines. Lot lines for each house site, or group of homes on a common lot, shall be identified. The placement of the lot lines shall give consideration to those areas identified in Step One as well as conform to the natural features of the landscape to the greatest extent possible, e.g., follow stone walls, lines of boundary trees, streams. The delineation of lots shall also consider the privacy provided for individual homeowners and opportunity for future owners to reasonably expand the structures on the lot.
- e. Conceptual Long Range Development Plan. When a subdivision will not utilize the entire parcel and there is potential for future subdivision or development of the parcel or any of the lots being created, the application for preliminary review shall include a conceptual long range development plan showing the potential utilization of the lots and the balance of the parcel not being subdivided. The conceptual long range development plan is a sketch plan with no engineering details, intended to be conceptual in nature, to rely on published data about natural resources relevant to the parcel, and to demonstrate that the current subdivision proposal will not compromise important conservation values or the long term development of the parcel as a conservation design subdivision. This plan shall show the relationship of the proposed subdivision area to the balance of the parcel and to adjacent land. This plan shall analyze the conservation and development potential of the remaining area of the

parcel and shall show, in general terms, the potential street network, open space areas, and development areas in a manner that demonstrates that both the proposed development and the future development can occur so that it conforms to the requirements for conservation design subdivisions and preserves the significant natural resource and conservation values of the entire parcel.

C. Technical Review

At the discretion of the planning board, the board may request that the applicant pay a reasonable fee to provide for a third-party technical review of the information provided on the site or the conceptual plan of the proposed development submitted for the preliminary review. The fee shall be due at the time of submission of a formal application. A formal application for subdivision review shall not be deemed complete until the technical review of the preliminary review materials is conducted.

D. Site Inspection

The planning board may conduct a site inspection of the subject property to review existing conditions, field verify the information submitted, and investigate the preliminary development proposal. The board may schedule this inspection before or after the preliminary review meeting or decide not to hold a site inspection at this time.

Open Space Uses

- Consider uses of surrounding lands, e.g. working forest, preservation land
- Consider public access
- Consider resident access
- Decision tree – conservation or conventional
- Management and stewardship plan
- Approval of planning board/conservation commission

Beginning Preamble: Define conservation subdivisions versus other cluster tools, etc. where is it appropriate to apply needs to have conservation subdivision.

Process

1. Identify Conservation Values
2. Conservation Areas
3. Conceptual Plan Sketch Plan

Open Space protection and ownership options:

Landscape context – what do you hope to gain by conserving the parcel?

Who decides which tool to apply? Needs an easily understood decision tree.

Biological consultation? Have biologist on retainer to create development.

Pre-application process is essential

DEVELOPMENT STANDARDS

MAXIMUM DEVELOPMENT DENSITY

- A. Base Number of Development Units: The applicant shall choose one of the following methods for calculating the base number of dwelling units that may be constructed on the property:
 - a. Parameters TBD
- B. Incentives
 - a. Expedited Review – if specific criteria are met, like avoidance of certain habitats, good connection to other lands, wildlife corridors, maintenance of key habitat or natural communities
 - b. Include within standards
 - i. Percent of open space required
 - ii. Amount of land around development that is considered buffer
 - iii. Exclusion of ecological impact zone from development from the open space eligibility – include a graphic of this concept.

Provision shall be made for the preservation of open space. Preserved open space shall be dedicated, either in fee or through a conservation easement to the Town, a community association comprising all of the present and future owners of lots in the subdivision, or a non-profit land conservation organization. Such easement shall be approved by the DRB. 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 Board, in accordance with the following:

- a. Open space land shall provide for the protection of identified resources, including farmland, productive forest, wildlife habitat, natural areas, aquifer protection areas, surface waters, stream banks, lake shore, historic and archaeological sites, and scenic views and vistas.
- b. Designated open space may include the portion of a single lot outside of a designated building envelope which is characterized by one or more of the above referenced features, or may encompass the contiguous boundaries of the above referenced feature located on multiple lots.
- c. The location, shape, size and character of the open space shall be suitable for its intended use. Generally, open space shall be at least 50% of the total area for projects involving a parcel(s) of twenty-five (25) acres or more. For smaller parcels, open space should be in proportion to the size and scope of the project, and its intended use.
- d. 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. Provisions shall be made to enable lands designated for agriculture and forestry to be used for these purposes. Management plans for forests, wildlife habitat, and shorelands may be required by the Board as appropriate. Areas preserved for agricultural use should be of a size that retains their eligibility for state and town tax abatement programs.

e. Open space land shall be located so as to conform with and extend existing and potential open space lands on adjacent parcels.

f. Sewage disposal areas and utility and road rights-of-way or easements, access and parking areas shall not be counted as open space areas.

Clustering Provision. The Reviewing Body may allow for a greater concentration or intensity of residential development within some section(s) of the development than in others, on individual lots which are smaller than the minimum lot size for the district within which the proposed subdivision is located, provided that there is an offset by a lesser concentration in other sections, including the reservation of no less than 50% of the remaining land as open space.

Ownership of Open Space Land. Open space land may be held in private ownership; or owned in common by a Homeowners' Association (HOA); transferred to a nonprofit organization such as a conservation trust, or association, acceptable to the Planning Board; or held in such other form of ownership as the Planning Board finds adequate to achieve the purposes set forth in subparagraph 5.a and b above and under the other requirements of this Section. The Planning Board shall, in its review, require as a condition of approval provisions for the ongoing maintenance and associated costs for such maintenance of the open space.

6. Homeowners' Associations or Agreements

Where any portion of a subdivision is proposed or required to be held in common by owners of lots, or owned in common by a Homeowners' Association (HOA) or similar entities, covenants for mandatory membership in the association setting forth the owners' rights, interest, privileges, responsibilities for maintenance, and obligations in the association and the common land, road or open space shall be approved by the Planning Board and included in the deed for each lot. The Planning Board shall not waive this requirement.

Note: Add some language to the effect that the town and citizens have the right to instigate enforcement of the stewardship plan if the HOA/Owner fails to pursue.

- Set up open space so it has value, even if it is not managed

- Ensure that the development/open space boundaries are clear (e.g. with path, road, stone wall)
- If there is a management plan for the open space that's not held by a land trust, who is accountable for stewardship?
- Encourage open space land to be held by a land trust, provide incentives when people use that option.

Other Standards

- Building or development envelopes
 - Minimizing clearing
 - Have a pre-development clearing and re-planting plan
 - Shared infrastructure (roads, utilities) wherever possible
 - Follow existing topography (utility lines, stone walls...)
 - Buffers around water bodies
 - Specific design principles – see the Dublin NH ordinance.
-

APPENDIX C. Overlay District Composite

Example 1

ASSUMPTIONS

- 1) Preliminary overlap map has been created based on best available information
- 2) We view the overlap as the Trigger for further review including ground truthing.
- 1) Define purpose of overlap district
- 2) Define area to be included in district
- 3) ID permitted and conditional uses
- 4) Develop review standards
- 5) ID review process
- 6) How does the overlay relate to other zoning districts?
- 7) Define Key Terms

Example 2

FINDINGS OF FACT

1. Natural resources such as natural water supply systems, forests, and plant and wildlife habitat provide valuable cultural, educational, and recreational opportunities and support local industries and public health and welfare.
 2. Areas that contain a diversity of plant and animal species can be a natural resource of local, state, national, and global significance.
 3. Plants and animals play an important role in maintaining healthy ecosystems through ecological interactions such as predation, pollination, and seed dispersal. Maintaining healthy natural resources mitigates air pollution, improves water quality, reduces drought and flooding, and sustains local timber, recreation and associated jobs and local revenue.
 4. The quantity and quality of drinking water is enhanced by healthy ecosystems through mechanisms such as water absorption and filtration. These services can be degraded when *impervious surfaces* are placed in sensitive areas.
 5. Maintaining healthy and diverse natural resources is important for a robust farming, forestry, and horticulture economy. These industries rely on pollinators, predators of pests, healthy soil, and other natural resources. These industries can be compromised when incompatible land uses surround them.
 6. Certain types of land development can negatively impact ecosystems, natural areas and wildlife. Properly planned development can maintain these natural resource assets by avoiding the *fragmentation* of key natural areas and the associated reduction of ecosystem function and services.
- Supplement findings of fact based on resources to be conserved, many examples included in the MCA model.

FROM NC Model – a section similar to this will be important to indicate existing resources

Explanatory Note: Extensive biological survey information and natural resource maps already exist for the state and can be used by local governments in delineating their Natural Resources Conservation Overlay District. The drafters encourage local governments creating an overlay district to utilize the Biodiversity and Wildlife Habitat Assessment map created by the NC Department of Environment and Natural Resources as the basis for delineating parcel boundaries for their overlay district with the exception of certain habitat types. We recommend that local governments also use additional wildlife, habitat and other natural resources conservation data available to communities in North Carolina. This conservation data is explained and compiled in one place by the NC Wildlife Resources Commission in the Green Growth Toolbox and available at www.ncwildlife.org/greengrowth. Utilizing existing data reduces the burden on local governments to collect natural resources data on their own. If a local government chooses to develop and use their own data, the model ordinance must be revised accordingly. The NC Wildlife Resources Commission or another natural resources agency may be consulted to provide technical information about the conservation data. Please note: North Carolina statutes establish special mandates that must be observed in order for the map and ordinance to be adopted, amended or repealed. This model ordinance does not set out those procedures.

Pragmatism – who will ground truth? Staff? Town? State Agency? Benefit of Brunswick’s straightforwardness.

PURPOSE

Encourage ecological connectivity and resilience

Purposes and Goals

1. The purpose of the Natural Resources Overlay District is to maintain the quality of life in [insert local government name here] and to protect the health, safety, welfare and general well-being of the citizens of [insert local government name here] by conserving and connecting the highest priority waterways, forests, and habitat for terrestrial and aquatic native plants and animals in [insert local government name here]’s jurisdiction while accommodating development and other land uses.
2. The Natural Resources Overlay District is designed to preserve and protect ecosystems while balancing the need for planned growth. This shall be accomplished by minimizing fragmentation or separation of significant natural resource areas, protecting upland habitats in addition to adjacent waterways and water sources, maintaining plant and animal habitat diversity and specifically protecting unique environmental features identified as integral parts of the designated landscape.
3. This ordinance shall establish standards and procedures for the use and development of land. The standards and procedures are designed to protect, conserve, enhance, restore, and maintain significant natural resource areas and the ecological connections between them.

4. The Natural Resources Overlay District conserves significant natural resource areas identified by [insert local government name here].
5. It is intended that the implementation of this ordinance accomplish the following goals:
 - a. Create a functional living environment by conserving remaining healthy terrestrial and aquatic habitats within our jurisdiction.
 - b. Maximize the retention of existing [describe region's significant natural resources here, for example streams, lakes, longleaf pine forest, bottomland or floodplain forest] which constitute significant natural resource areas, which is identified as a valuable natural resource of our community.
 - c. Connect significant natural resource areas with corridors of land in a natural state to maximize the migration of wildlife and plant species among habitat areas.
 - d. Maintain balanced outdoor recreation opportunities such as hunting, fishing, bird watching, and other outdoor pursuits.
 - e. Create opportunities for greenways throughout the community for trails, connecting habitat, protecting streams, sustaining wildlife, and providing recreation activities for residents.
 - f. Ensure that land uses and development are planned and designed to be harmonious with significant natural resources areas and to reduce conflicts with working lands, wildlife conservation, and habitat management activities.
 - g. Protect remaining large contiguous significant natural resource areas from activities that would alter their ecological integrity, balance, or character.
 - h. Maintain the diversity of plant and wildlife species and habitat found in the community and help to keep rare species from requiring Endangered Species Act protections in the future.
 - i. Promote multiple community benefits e.g. nutrient pollution reduction, water supply protection, flood protection, steep slope protection, priority plant and animal habitat protection, air quality, soil conservation, minimizing noise and light pollution, and others.
 - j. Protect and enhance scenic resources including landscapes, ridgelines, meadows, and geologic features that have special scenic character or a historic or aesthetic interest or value

MAP

Review and amend cycle as new scientific information becomes available

Add, but not delete

"How to Read a Map" References

Natural Resources Conservation District Established and Official Map

- A. The Natural Resources Conservation District is hereby established as a separate overlay district, whose provisions apply above and beyond the

provisions of the underlying zoning district (section F1 and potentially drop here)

The boundaries of the Natural Resources Conservation District are shown on [insert local government's name here]'s Natural Resources Conservation Map, dated [insert data], on file with [insert appropriate office here, e.g., office of city clerk], which map is herein adopted by reference. This map shall be known and cited as the "Official Natural Resources Conservation Map." The Official Natural Resources Conservation Map and all explanatory information contained therein accompany and are hereby made part of this ordinance. Upon adoption of this ordinance, the parcels included in the Natural Resources Conservation District shall be shown on the official zoning map.

- B. The general boundaries of the Natural Resources Conservation District are defined by the best available conservation data delineating significant natural resource areas identified by [insert local government name here], with rights-of-way and property lines used to determine inclusion or exclusion in the Natural Resources Conservation District.
- C. In case of dispute include provisions specifying how to interpret maps. *NC model:* In the event of a dispute, the applicability of this ordinance to a particular area of land shall be determined by reference to the North Carolina General Statutes, the North Carolina Administrative Code, and local zoning and jurisdictional boundary ordinances.

**Illustrations are powerful
Complex ideas become accessible
Include and require them**

REVIEW STANDARDS

(FACTOR [x] may be different depending on resources value)

- A. General Standards – all activities to which this ordinance applies shall comply with the standards in this ordinance

Standard: For Subdivisions in overlay of over [X] units, cons subdivision sign and standards shall be used.

OR

Standards: For subdivisions or development of [X] or fewer homes, the following standards apply (siting standards)

Standard: If parcel is partially within and partially outside of overlay, development envelope shall be located outside overlay [unless....]

Application process

Single family home or small X development

- 1) Site information/site plan
 - Habitat survey – consult with biologist, landowner's responsible
 - Existing disturbed areas
 - Sketch plan
 - Final site plan

APPLICABILITY

Applicability. This section shall apply to the following activities in the overlay districts:

1. Disturbance, as defined in section 111;
2. New subdivisions;
3. Construction, enlargement or placement of a new building or structure;
4. Construction of a road, driveway, or parking lot;
5. Creation or expansion of commercial utility corridors;
6. Installation of a fence within the Wildlife Corridors except:
 - a. fences used as lawn accessories; or
 - b. fences that enclose existing cleared areas; or
 - c. fences erected for standard agricultural purposes; or
 - d. fences lower than 4-½ feet and that have at least 16 inches of clearance between the lowest horizontal part of the fence and the ground.

B. Exempt Activities

The following activities do not pose a significant adverse impact on the environmental value of unfragmented blocks and corridors, and therefore do not require approval under this section of the ordinance. The standards of the underlying zone would continue to govern these activities where applicable:

1. Maintenance of existing hayfields and pastures
2. Standard farming activities at an existing establishment practicing agriculture, including but not limited to:
 - the construction of traditional walls and fences for the purpose of enclosing existing livestock areas or delineating existing fields, pastures, crops, and garden plots
 - construction or improvement of structures used for agriculture
 - bush-hogging existing regenerating fields for agricultural purposes
 - creation of utility lines and corridors directly associated with farm operations
 - creation of impervious surfaces for the purposes of equipment and product storage, and access to existing agricultural facilities, fields and pastures.

3. Forest management activities including commercial woodlot management completed in accordance with Maine Forest Practices Act; harvesting of wood products for personal use, but not permanent clearing as defined in section 111; and removal of dead, dying, and diseased trees. The removal of stumps, and grading conducted to limit natural regeneration of trees is not considered a forest management activity.
4. Forest stewardship plan requirement or maybe address exemption for wildlife habitat management
 - Relation in values to overlay purposes
 - Authorized by/endorsed by state wildlife agency
5. Structures constructed or placed on existing maintained lawns or impervious surfaces.
6. Permanent clearings within Wildlife Corridors less than 10,000 square feet in size.
7. The construction of one single family residence and accessory structures on a lot that is created by a single division of an existing parcel and has frontage on a public road. The total area of disturbance in the overlay district on the parcel must not exceed 1 acres.
8. The enlargement of existing agricultural clearings, or the creation of new agricultural clearings including pastures, provided the permanent clearings are utilized for agricultural purposes for a minimum of 30 years prior to any non-agricultural use. If such clearings are used for agriculture for fewer than 30 year, but are maintained as permanent clearings, the area maintained as a permanent clearing within the Overlay District shall be considered a disturbance for the purposes of 217.4. If the agricultural use is abandoned during the 30-year period and the clearing is allowed to naturally regenerate, the cleared area will not be considered a disturbance.

APPLICATION PROCESS

Natural resources conservation plans shall be developed by persons proposing to impact a significant natural resource area within the Natural Resources Conservation District. No person shall commence development that is subject to this ordinance without an approved natural resources conservation plan. The person proposing to conduct development activity shall submit the following Information:

1. Site information, if not otherwise required for the approval of the development, including the following:
 - a. A location plan and boundary line survey of the tract.
 - b. The location of the Natural Resources Conservation District boundaries.
 - c. A habitat survey shall confirm the presence of significant natural resources. The habitat survey should include documentation of wetlands, rock outcrops, intermittent and perennial streams, caves and mines, longleaf pine forest, upland hardwoods and upland

pine forest and other significant natural resource areas. The habitat survey shall be conducted by a State Agency or qualified biologist with demonstrated experience in wildlife habitat identification. The boundaries of all of the significant natural resources shall be identified and labeled on the sketch plan and all site plans. Photographs depicting each of the significant natural resources on the site shall be provided.

- d. The site plan must identify and provide pictures of existing disturbed areas, existing buildings, structures, utility lines, sewers, water and storm drains, all constructed stormwater management systems, and existing impervious surfaces.
- e. Detailed sketch plan of proposed development outlining the total disturbance area, including proposed building footprints, site property improvements, utilities, and landscaping. The sketch plan is intended to be an approximation of the final site plan and serves the purpose of providing an opportunity for changes to be proposed ahead of significant investment by the applicant. The sketch plan should be reviewed by the planning department ahead of formal submission of the detailed final site plan.
- f. Final site plan of proposed development outlining the total disturbance area, including proposed building footprints, site property improvements, utilities, and landscaping.

REVIEW STANDARDS

- Connectivity with adjacent areas
- Road and driveway length policy
- Buffers on wetlands and other waterways
- Prevent impact to local and state signification natural communities/resources

The proposed plan shall also include the following performance standards that are applicable to the type of habitat found in the habitat survey:

- a. Significant natural resources shall not be cleared of vegetation and shall not be developed in any manner that would negatively impact the habitat, except under the following conditions:
 - i. Improvements that protect or enhance the enjoyment of the habitat, including but not limited to uncovered walkways, self-guided trails, and protective fences.
 - ii. If the significant natural resources cover greater than 50% of the tract, then up to 50% of the tract may be developed. Proposed development on such lot shall be located outside the district boundary. Significant natural resources should be permanently protected in order of priority listed in the definition section such that any higher item on the list is a higher priority. The undeveloped habitat areas shall be contiguous within the tract and with habitat areas on adjacent tracts to the maximum extent possible. The undeveloped habitat should have the maximum habitat interior to edge ratio possible (circular shape) to prevent habitat fragmentation. To the maximum extent possible the development design shall protect and connect as many priority significant natural resources as possible and such that wetlands, as defined under definition 22.c, are not filled and the protection area is maintained around the wetland and connected to other wetlands or streams or

floodplain forest. Connectivity means that habitat areas are linked with areas of contiguous, natural vegetation that is at least 300 feet wide.

- iii. To provide for access to otherwise inaccessible parts of the parcel/development. If part of the parcel could be developed, but would be inaccessible due to the existence of significant natural resources, a road and/or utilities may be constructed through the significant natural resources. The road and/or utilities, however, shall cross at the narrowest practical point and shall be designed and constructed to the maximum extent possible to minimize impact to and fragmentation of the highest priority significant natural resources. Where significant natural resources must be negatively impacted, an equal area must be restored and protected on site, up to 50% of the tract.

CONSTRUCTION PERFORMANCE STANDARDS

PLANNING AND POST-CONSTRUCTION PERFORMANCE STANDARDS

- i. Runoff from impervious surfaces on the parcel shall not be discharged directly to the significant natural resources without vegetated filtration and energy dissipation.
- ii. Sewer lines, water lines, and other utility infrastructure shall not be constructed within 100 feet of perennial and intermittent streams to the maximum extent possible. All utility crossings shall be minimized. The directional bore stream crossing method (installation of utilities beneath the riverbed avoiding impacts to the stream and protection area) shall be used for utility crossings wherever practical, and the open stream crossing method shall only be used when water level is low and stream flow is minimal.
- iii. Maximum impervious surface coverage
Not more than fifteen (15) percent of the total tract area may be covered by buildings and any impervious surfaces.
- iv. Pesticides (including insecticides and herbicides) shall not be used for maintenance of rights-of-way within one hundred (100) feet of perennial and fifty (50) feet of intermittent streams, or within the 100 year floodplain, unless the pesticide is labeled for use in aquatic systems or is part of the approved Natural Resource Conservation Plan.
- v. If curbs are used, curbing shall be with a 1:4 slope to allow passage of small animals.
- vi. Use bridges for all permanent roadway crossings of streams and associated wetlands. If culverts must be used, culvert must be designed to allow passage of aquatic organisms by burying the culvert(s) in the stream bottom or bank by at least 1 foot. Stream relocation or widening shall be avoided but may be done if necessary providing state-of-the-art natural channel design and construction techniques are used.
- vii. The land surrounding built structures should be maintained in natural vegetation to the maximum extent possible. Non-native invasive species shall not be planted for any purpose.
- viii. The post-development condition should maintain connectivity of all significant natural resources, both within the tract and between adjacent tracts. Connectivity means that habitat areas are linked with areas of contiguous, natural vegetation that is at least 300 feet wide.

STANDARDS

Specific construction best development practices
Specific design best development practices
– see MCA model ordinance (

Smaller projects need ecological site analysis and can meet performance standards

Larger projects that meet some threshold depends on landscape and resources (contextual)

Trigger for a management plan (resources, lot size)

The Codes Enforcement officer or Planning Board may reduce front, side, and rear setback requirements to minimize disturbances within the overlay district provided

- A. No other reasonable alternative exists,
- B. The setback reduction (s) will not cause unreasonable adverse impacts to the adjacent property.

Specify who will make decisions and how
Standards for when you CANNOT subdivide

ix. Site gas stations, car washes, and other potential “spill” land uses at least two hundred (200) feet from perennial and intermittent streams.

d. Site homes close to existing development rather than in middle of lot
(this language needs to be “ordinanced” include image to help with explanation)

Resources areas made explicit (as in NC model)

24. Sedimentation: The process by which sediment resulting from accelerated erosion has been or is being transported off the site of the land-disturbing activity or into a lake or natural watercourse.

25. Significant natural resource areas: shall include those areas so designated by [insert local government name here] by virtue of containing rare or declining habitats or habitats that support rare species or a high diversity of species. These significant natural resource areas consist of the following natural resources and habitats which are:

- a. Jurisdictional and non-jurisdictional wetlands or endangered species habitat as delineated by state and federal agencies for environmental permitting.
- b. The presence of a natural community or communities as defined by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina within Significant Natural Heritage Areas identified and mapped by the NC Natural Heritage Program. Significant Natural Heritage Areas are not the same as significant natural resource areas and have their own definition.
- c. An average 750 foot radius upland area of any shape adjacent to isolated non-alluvial wetlands not connected to streams or not within conserved floodplains, starting from the edge of the water or watermark. This area includes a 150 foot radius protection area of symmetrical shape around the wetland water’s edge. Wetlands are jurisdictional and non-jurisdictional wetlands with an area of water inundation over 100 square feet in size and of the following types defined by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina: Floodplain Pool, all types of Mountain Bogs and Fens, Upland Seepages, Piedmont and Mountain Upland Pools and Depressions and Coastal Plain Depression Communities and Interdune Ponds.
- d. Two hundred (200) feet on either side of permanent (“blue line”) streams or rivers within subwatersheds (14 digit Hydrologic Unit Code) which support federally endangered or threatened aquatic species. These protection areas may be reduced to accommodate other priority habitat conservation on site, but shall not be less than 100 feet.
- e. A 300 foot wide area on either side of the waterway adjacent to Aquatic Significant Natural Heritage Areas identified by the NC Natural Heritage Program. These protection areas may be reduced to accommodate other priority habitat conservation on site, but shall not be less than 100 feet.
- f. Habitat that is sufficient (as determined by the qualified biologist) to conserve species occurrences on the tract of documented Natural Heritage Element Occurrences tracked by the NC Natural Heritage Program.

- g. Sufficient habitat as determined by the qualified biologist, of state listed wildlife species or federally listed plants observed opportunistically during site visits. The term “listed” includes designation as Endangered, Threatened, or Special Concern.
- h. High elevation habitats (Blue Ridge Mountains) which are forests above 3500 ft. in elevation that meet the definition of one of the following community types defined by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina: Fraser-fir forest, red spruce-Fraser fir forest, high elevation red oak forest, northern hardwood forest, and boulderfield forest.
- i. Beaches, dunes and estuarine islands (Coastal Plain) which are sand covered habitats occurring along the immediate ocean coastline and in estuaries. Dune vegetation is characterized by sand substrate dominated by open sand and grasses including sea oats grass and American beach grass. Some shrubs and exotic vegetation may be present. Upper beach vegetation can include sea rocket, Dixie sandmat, seaside sandmat, and seabeach amaranth. Estuarine islands include both naturally occurring islands and islands created by dredged materials in estuaries.
- j. A three hundred and thirty (330) foot wide area on all sides of a colonial waterbird nesting colony (in the Piedmont or Coastal Plain) encountered or as mapped by the NC Wildlife Resources Commission. A waterbird nesting colony is defined as an area where 2 or more colonial waterbirds are nesting or have nested within the past 2 years. Colonial waterbirds are any species of heron, egret, anhinga, tern, skimmer, plover, ibis, pelican, stork, and gull. These data are mapped (please see the user’s manual for details on obtaining these maps).
- k. A 650 foot protection area around rock outcrops, caves, and mines (Piedmont and Mountains). Rock outcrops which are natural features that contribute to a natural community structure consistent with physical characteristics of the underlying geological unit. For the purposes of this ordinance, rock outcrops include any of the following natural communities described by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina: High and low elevation rocky summit, High and low elevation granitic dome, Montane, Piedmont, and Coastal Plain acidic and mafic cliffs, Montane and Piedmont mafic and calcareous cliffs, Coastal Plain marl outcrops, Granitic flatrocks, High elevation mafic glade, Diabase glade, Ultramafic outcrop barren and Boulderfield forests.
- l. Maritime forests and shrublands found on the Coastal Plain on stabilized upper dunes and flats protected from salt water flooding and the most extreme salt spray. This habitat includes all types of Maritime Upland Forests as described by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina. Canopies of maritime forests can be dominated by live oak, sand laurel oak, loblolly pine, beech, American holly or hickory. The understory is often dominated by dense shrubs and vines. Any forests or shrublands along the coast or islands meeting this description will be considered maritime forest.

- m. Longleaf pine forest (Piedmont, Sandhills and Coastal Plain), defined as forests where 20% of the tree canopy consists of longleaf pine trees, regardless of age, within a stand at least 10 contiguous acres in size. These 10 acres can occur solely on the development tract or only a portion of the 10 acres can occur within the development tract.
- n. An undeveloped area at least 300 feet wide connecting isolated wetlands on the property.
- o. Floodplain forests with a canopy that is dominated by hardwood trees within the 100 year floodplain. Floodplain forests are also Coastal Floodplains and Piedmont and Mountain Floodplains within and outside of the 100 year floodplain as defined by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina.
- p. Wet Pine Savannas (Piedmont, Sandhills and Coast), Peatland Pocosins, Streamhead Pocosins (Sandhills and Coast) and Coastal Plain Nonalluvial Wetland Forests as defined by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina.
- q. A 100 foot wide area adjacent to each side of perennial streams, rivers, lakes and reservoirs and a 50 foot wide area adjacent to intermittent streams.
- r. Mature hardwood forest consisting of greater than 25% hardwood trees native to the region over 50 years old or greater than 20 inches diameter to indicate “mature” trees (this will vary depending upon tree species and growing conditions).
- s. Lands designated by [insert local government name] as important for hunting, wildlife viewing, and other traditional forms of wildlife-related recreation, including lands outside of NC Wildlife Resources Commission Game Lands, within 150 yards of Game Land boundaries. These data are mapped (please see the user’s manual for details).
- t. Wildlife corridors and habitat connectors between significant natural resource areas where sufficient information exists to designate these areas or where these areas are part of the Biodiversity and Wildlife Habitat Assessment of the NC Department of Environment and Natural Resources Conservation Planning Tool.

26. Significant natural resources: significant natural resource areas that have been confirmed in site surveys by the qualified biologist and or state and federal permitting biologists.

27. Significant Natural Heritage Area: A Significant Natural Heritage Area as defined and mapped by the NC Natural Heritage Program. These are, “terrestrial sites that are of special biodiversity significance. A site’s significance may be due to the presence of rare species, exemplary or unique natural communities, or other important ecological features. The areas identified represent the approximate boundaries of ecologically significant sites.” These data are mapped (please see the user’s manual for details on obtaining these maps).

28. Site Plan: An accurately scaled development plan that shows existing conditions on a site as well as depicting details of proposed development.

29. Stormwater The flow of water which results from precipitation and which occurs immediately following rainfall or snowmelt.
30. Subwatersheds which support federally endangered or threatened aquatic species: These watersheds (14 digit Hydrologic Unit Code) have been surveyed by state and federal biologists and are known to contain federally endangered and threatened species. These data are mapped (please see the user's manual for details on obtaining these maps).
31. Tract: Contiguous land under one ownership or under multiple ownership either developed as a single unit or recorded as a single unit.
32. Wetlands: Jurisdictional and non-jurisdictional wetlands as defined or delineated by state and federal regulatory agencies or those wetlands following the definition under the definition of significant natural resource areas (c.). Wetlands are important for flood and drought control and water pollutant filtration and act as sponges across the landscape.
33. Wildlife corridors: Areas of undeveloped land at least 300 feet wide that connects significant natural resource areas allowing wildlife to move between habitats.

INCLUDE similar reference for specific region:

Shafale, M.P. 2012. Classification of the Natural Communities of North Carolina, Fourth Approximation. North Carolina Natural Heritage Program, Raleigh.

APPENDIX D: Examples of Conservation Development Ordinances

1. Town of Newry, Maine
2. Town of Elmore, Vermont
3. Model Language, New Hampshire

APPENDIX E: Examples of Overlay Districts

1. Town of Brunswick, Maine
2. Town of Jericho, Vermont
3. Model Language, North Carolina
4. Conservation Area Overlay District, Metropolitan Conservation Alliance

Conservation Development

Town of Newry, Maine

SECTION XVIII: PROVISION FOR CLUSTER DEVELOPMENT

SECTION USER'S GUIDE: *This section allows innovative approaches to housing and environmental design by authorizing the Planning Board to reduce certain requirements of this Ordinance for applicants proposing clustered development.*

A. PURPOSE

It is the policy of the Town of Newry to encourage the development of cluster subdivisions in order to preserve a sense of space, provide for open meadow areas woodland tracts, recreational land uses, preserve other resources identified in the Town of Newry Comprehensive Plan, and blend new development with the traditional open and wooded landscapes of Newry.

These provisions are intended to implement that policy by providing incentives that afford flexibility in lot sizes/density, lot layout and design and road frontage requirements to the landowner. It also allows the Planning Board to waive or reduce certain otherwise applicable standards and provisions of this Ordinance and other Town of Newry Ordinances if landowners commit to the permanent preservation of important open space resources. These incentives are designed to encourage greater flexibility and more innovative approaches to development and environmental design which will promote the most appropriate use of land, preservation of permanent open space that include meadow areas, woodlands, important natural features, wildlife habitat, water resources, ecological systems and scenic areas for the benefit of present and future residents.

A cluster subdivision achieves the purposes of this Section by reducing the lot size, frontage and setback requirements. It locates structures and accompanying uses in those areas where they have the smallest impact on identified meadow areas, woodlands, environmental, wildlife and other open space resources. These resources are then permanently preserved by the use of covenants and restrictions or conservation easements.

B. APPLICATION PROCEDURE

1. Any applicant for a cluster subdivision is encouraged, but not required, to have a pre-application conference with the Planning Board.
2. The submissions for a subdivision with open space shall include all plans and materials required for a conventional subdivision under this Ordinance.

C. GENERAL REQUIREMENTS

In Planning Board review and approval of a cluster subdivision, the following requirements shall apply and shall supersede any inconsistent or more restrictive provisions of this Ordinance and other Town of Newry Ordinances. Dimensional

reductions shall not be considered as a variance as provided for in title 30-A MRSA Section 4353. 4-C.

1. Allowable Density

The number of lots or dwelling units shall be based in the following manner: Determine the buildable acreage of the parcel by taking the total area of the parcel and subtracting in order the following:

- a. area in proposed rights-of-way;
- b. area of two or more contiguous acres with sustained slopes of 20% and greater;
- c. area of the parcel covered by surface waters.

Then divide the buildable area by the minimum lot size required for the District. A minimum of 50% of the buildable area must be designated as open space.

2. Density Bonus

The Planning Board may grant a density bonus of one (1) lot or dwelling unit for each ten (10) lots or dwelling units when it makes a written finding that the cluster subdivision satisfies the policies of the comprehensive plan, achieves the applicable purposes contained in Section 3 and 5 and provides for adequate subsurface wastewater disposal.

3. Layout and Siting Standards

In planning the location and siting of residential structures in a cluster, subdivision priority should be given to the preservation of the open space for its natural resource value. Structures and other disturbed areas shall be located and sited on the least valuable natural resource portion of a parcel, taking into account the contours of the land and the steepness of slopes.

The building lots on a parcel shall be laid out and the residential structures shall be sited according to the following principles. The Planning Board in its discretion shall resolve conflicts between these principles as applied to a particular site.

- a. In such manner that the boundaries between residential lots and open spaces are well-buffered by vegetation, topography, roads or other barriers in order to minimize potential conflict between residential and open space uses.

- b. Lots and/or structures will be oriented with respect to scenic vistas, natural landscape features, topography and natural drainage areas, in accordance with an overall plan for site development.

4. Space Standards

- a. In shoreland areas all dimensional requirements shall not be reduced below the minimum required in the Shoreland Zoning Ordinance.
- b. The required minimum land area per dwelling unit for the building envelope may be reduced to 20,000 square feet based on soil suitability for subsurface waste water disposal. The building envelope shall not include 100-year floodplains, areas of two or more acres of sustained slopes greater than 20 percent, or wetlands. The Planning Board may further reduce this standard when the development will be served by a central sewage treatment system.

The acreage shall be contiguous, unless the Planning Board finds that noncontiguous acres are part of a common, overall scheme of development.

If the lot area is reduced, the total open space in the development shall equal or exceed the sum of the areas by which the building lots are reduced below the minimum lot area normally required in the district.

- c. Minimum road frontage requirements may be waived or modified by the Planning Board provided that no individual lot or dwelling unit shall have direct vehicular access onto a public road existing at the time of development.

5. Open Space Requirements

In Planning Board review and approval of a cluster subdivision, the following requirements shall apply and shall supersede any inconsistent or more restrictive provision of this Ordinance.

- a. Open Space Uses. On all parcels, open space uses shall be appropriate to the site. Open space should include natural features located on the parcel(s) such as, but not limited to, open meadows, woodland and wildlife habitat. Open space shall be preserved and maintained subject to the following, as applicable:
 - i. On parcels that contain land that are suited to meadow uses, open space shall be preserved for such use, other compatible open space uses such as wildlife habitat, non-intensive recreation, or resource conservation.

- ii. On parcels that contain land that are suited to woodland uses, open space shall be preserved for forestry, other compatible open space uses such as wildlife habitat, non-intensive recreation (active or passive), or resource conservation.
 - b. When the principal purpose of preserving portions of the open space is the protection of natural resources such as wetlands, steep slopes, wildlife habitats, and stream corridors, open space uses in those portions may be limited to those which are no more intensive than passive recreation.
 - c. Notations on Plan. Open space, common lands, roads or facilities must be clearly labeled on the final plan as to its use or uses with respect to the portions of the open space that such use or uses apply, ownership, management, method of preservation, and the rights, if any, of the owners in the subdivision to such land or portions thereof. The plan shall clearly show that the open space land is permanently reserved for open space purposes, and shall contain a notation indicating the book and page of any conservation easements or deed restrictions required to be recorded to implement such reservations.
 - d. Ownership of Open Space Land. Open space land may be held in private ownership; or owned in common by a Homeowners' Association (HOA); transferred to a nonprofit organization such as a conservation trust, or association, acceptable to the Planning Board; or held in such other form of ownership as the Planning Board finds adequate to achieve the purposes set forth in subparagraph 5.a and b above and under the other requirements of this Section. The Planning Board shall, in its review, require as a condition of approval provisions for the ongoing maintenance and associated costs for such maintenance of the open space.
6. Homeowners' Associations or Agreements

Where any portion of a subdivision is proposed or required to be held in common by owners of lots, or owned in common by a Homeowners' Association (HOA) or similar entities, covenants for mandatory membership in the association setting forth the owners' rights, interest, privileges, responsibilities for maintenance, and obligations in the association and the common land, road or open space shall be approved by the Planning Board and included in the deed for each lot. The Planning Board shall not waive this requirement.

Conservation Development

Town of Elmore, Vermont

methods and practices that minimize flood damage, and (d) be constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

4. The flood carrying capacity within any altered or relocated portion of a watercourse shall be maintained.
5. New and replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate the infiltration of flood waters into the systems and discharges from the systems into flood waters.
6. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
7. New and replacement manufactured homes shall be elevated at least one (1) foot above the base flood elevation.
8. The lowest floor, including basement, of all new structures shall be at or above the base flood elevation,
9. Existing buildings to be substantially improved, or have been determined to meet the definition of substantial damages, for residential purposes shall be modified or elevated to meet the requirements of Subsection (8).
10. Existing buildings to be substantially improved, or have been determined to meet the definition of substantial damages, for nonresidential purposes shall either (a) meet the requirements of subsection 8, or (b) be designed to be watertight below the base flood elevation with walls substantially impermeable and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A permit for a building proposed to be floodproofed shall not be issued until a registered professional engineer or architect has reviewed the structural design, specifications, and plans, and has certified that the design and proposed methods of construction are in accordance with accepted standards of practice for meeting the provisions of this subsection.
11. All new construction and substantial improvements with fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria: a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves or other cover coverings or devices provided that they permit the automatic entry and exit of floodwaters.
12. Recreational Vehicles placed on sites within Zones A1-A30, AH and AE shall either (i) be on the site for fewer than 30 consecutive days, (ii) be fully licensed and ready for highway use, or (iii) meet all standards of Section 60.3(b)(1) of the National Flood Insurance Program Regulations and the elevation and anchoring requirements *found in Section 5.3(E) of this bylaw.*

5.4 Planned Residential Development (PRD) Review

- A. **Purpose.** In accordance with the Act [4417], Planned Residential Developments (PRDs) are allowed in the Village, Rural-East, Rural-West and Shoreland Districts to encourage innovative and flexible design and development that will promote the most appropriate use of land, and specifically achieve one or more of the following objectives:

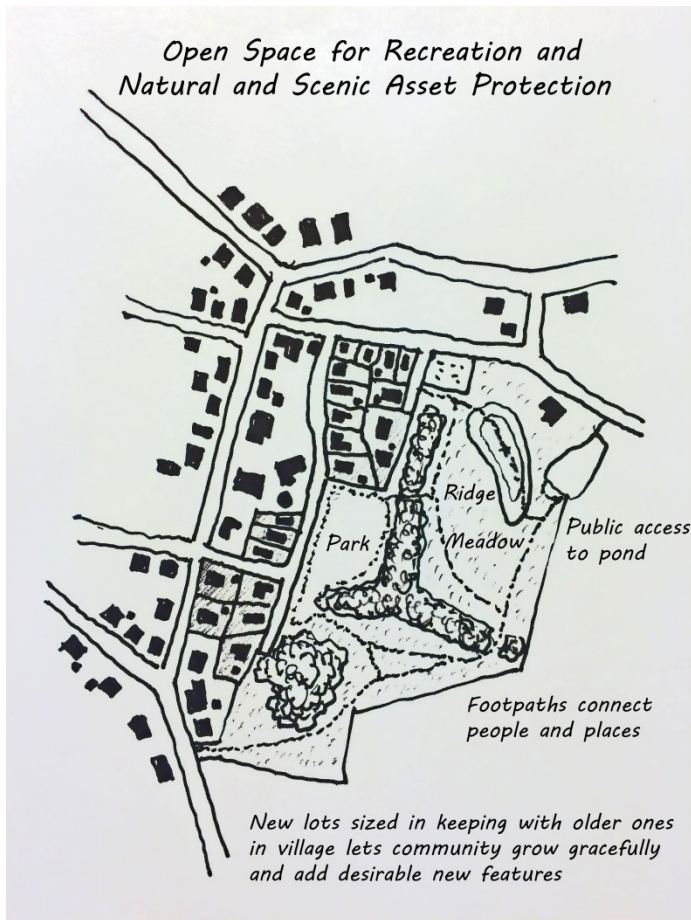
1. Increase density, reduce lot size and/or facilitate the adequate and economical provision of streets and utilities in order to provide affordable housing;
2. Cluster residential development to preserve and maintain open space, including but not limited to important resource or conservation lands; and/or
3. Protect significant natural, cultural or scenic features as identified in the Elmore Town Plan, or through site investigation.

B. **Review Process.** A PRD shall be reviewed in accordance with the procedures for conditional use review set forth in Section 5.3. An application for PRD approval shall include, in addition to the Site Development Plan under Section 5.2, a statement describing all proposed modifications, changes or supplements to existing bylaw requirements. Modifications of this bylaw approved by the DRB shall be noted in writing and appended to the plat. All other provisions of this bylaw not specifically modified shall remain in effect and be applicable to the project. Approval granted by the DRB under this Section for a PRD involving the development of one or more uses subject to conditional use review shall not exempt the proposed development from subsequent DRB review in accordance with Section 5.3 unless the Board specifically grants conditional use approval at the time of PRD approval.

C. **Standards.** The modification of zoning regulations by the DRB may be permitted simultaneously with the approval of the subdivision plat, in accordance with the following standards:

1. The PRD shall meet all applicable standards set forth in Section 5.3, and shall be consistent with the Elmore Town Plan and all other applicable municipal regulations and ordinances currently in effect. The PRD shall also meet all local and state regulations for sewage disposal and the protection of water quality.
2. The PRD shall represent an effective and unified treatment of the development site, including provisions as appropriate for the preservation or protection of surface and ground waters; wetland, stream bank, floodplain and lake shore areas; significant topographic features, including hilltops and ridgelines; areas of steep slope or shallow soil; significant resource lands, including agricultural and forest land; historic or archaeological sites and structures; natural and critical habitat areas; and open spaces, including scenic views and vistas.
3. A PRD shall include only residential uses and associated accessory structures and uses allowed within the district in which the PRD is located. The dwelling units permitted may, at the discretion of the DRB, be of varied types, including single-family, two-family, or multi-family construction, and may be attached or detached. In no case shall the maximum number of units in a multiple family dwelling exceed six (6). Associated uses may include, but not be limited to home occupations, small day care centers, small group homes, and cottage industries.
4. The total number of dwelling units shall not exceed that which would be permitted in the DRB's judgment if the parcel were subdivided into buildable lots in conformance with the district minimum lot area required for single family dwellings. The number of dwelling units allowed in a PRD may, at the discretion of the DRB, be increased by up to twenty-five (25) percent of the number which the Board determines could be provided on the site in conformance with zoning district requirements. Density bonuses shall be granted only for PRDs in which seventy-five (75) percent or more of the total land area is to be set aside as open space, or for the provision of affordable or elderly housing.
5. The DRB may allow for a greater concentration or intensity of residential development within some section(s) of the development than in others, on individual lots which are smaller than the minimum lot size for the district within which the PRD is located, provided that there is an offset by a lesser concentration in other sections, including the reservation of no less than 50% of the remaining land as open space.

6. The minimum front, side and rear yard setbacks at the periphery of the PRD shall be as dictated for the particular district unless otherwise specified by the DRB. The Board may consider within the project area other setback standards, such as zero lot lines, as part of subdivision review.
7. All PRDs must also comply with the standards for subdivision set forth in Section 4.11. In addition, the DRB may impose further restrictions on the height and spacing of buildings; and greater setback and screening requirements for structures, parking areas and other development along the perimeter of the project, and between built and open space areas.
8. Provision shall be made for the preservation of open space. Preserved open space shall be dedicated, either in fee or through a conservation easement to the Town, a community association comprising all of the present and future owners of lots in the subdivision, or a non-profit land conservation organization. Such easement shall be approved by the DRB. 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 Board, in accordance with the following:



a. Open space land shall provide for the protection of identified resources, including farmland, productive forest, wildlife habitat, natural areas, aquifer protection areas, surface waters, stream banks, lake shore, historic and archaeological sites, and scenic views and vistas.

b. Designated open space may include the portion of a single lot outside of a designated building envelope which is characterized by one or more of the above referenced features, or may encompass the contiguous boundaries of the above referenced feature located on multiple lots.

c. The location, shape, size and character of the open space shall be suitable for its intended use. Generally, open space shall be at least 50% of the total area for projects involving a parcel(s) of twenty-five (25) acres or more. For smaller parcels, open space should be in proportion to the size and scope of the project, and its intended use.

d. 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. Provisions shall be made to enable lands designated for agriculture and forestry to be used for these purposes. Management plans for forests, wildlife habitat, and shorelands may be required by the Board as appropriate. Areas preserved for agricultural use should be of a size

that retains their eligibility for state and town tax abatement programs.

e. Open space land shall be located so as to conform with and extend existing and potential open space lands on adjacent parcels.

f. 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 prove, to the satisfaction of the Board, that they will in no way disrupt or detract from the values for which the open space is to be protected.

9. Where a district boundary line divides a parcel, the DRB may allow the development of a single PRD with a total density based on the combined allowable density of each district.
10. Two (2) or more contiguous parcels under the ownership or control of the applicant may be combined for review as a PRD. 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, in the DRB's judgment, if the land were subdivided into lots in conformance with district regulations.
11. PRDs are prohibited within the Forest District.

Conservation Development

Model Language

New Hampshire

Model Language and Guidance for Implementation

This section provides a model conservation subdivision zoning ordinance and additional model subdivision regulation language. Also included are model resolutions authorizing the planning board to require applicants to participate in site inventory review and conceptual plan review meetings with the planning board prior to submitting a formal subdivision application. The model subdivision regulation language revises the application requirements and review process for all subdivisions. A conservation subdivision ordinance will be more effective if a community also revises the general requirements and application process for all subdivisions.

CONSERVATION SUBDIVISION ORDINANCE

I. PURPOSE

This Conservation Subdivision ordinance is intended to encourage environmentally sound planning to conserve open space, retain and protect important natural and cultural features, and provide for efficient use of land and community services to advance the goals stated in the master plan.

Each community should examine its own purpose and objectives, as expressed by the public and articulated in the Master Plan, in implementing this approach.

II. OBJECTIVES

- To maintain rural character, preserving farmland, forests and maintaining rural views.
- To preserve those areas of the site that have the highest ecological value, including, for example, wildlife habitat, e.g., large unfragmented blocks of undeveloped land, areas of highest condition identified based on NH Fish and Game's Wildlife Action Plan, and water resources, e.g., drinking water supply areas and watersheds, wetlands, streams and rivers.
- To locate buildings and structures on those portions of the site that are the most appropriate for development and avoiding developing in areas ill-suited for development, including, for example, areas with poor soil conditions, a high water table, that are subject to frequent flooding or that have excessively steep slopes.
- To preserve historic, archeological, and cultural features located on the site.
- To create a contiguous network of open spaces or "greenways" by linking the common open spaces within the subdivision and to open space on adjoining lands wherever possible.
- To reduce the impacts on water resources by minimizing land disturbance and the creation of impervious surfaces and stormwater runoff.
- To reduce the amount of roads, sidewalks, and stormwater management structures that must be built and maintained.
- To minimize the impact of residential development on the municipality, neighboring properties, and

the natural environment.

III. DEFINITIONS

For the purpose of this chapter, the terms used herein are defined as follows:

Municipalities should review the list below and include only those terms not already defined within their zoning ordinance, or revise terms included within their ordinance as needed. Terms that are expected to already be defined in a town's existing zoning ordinance are not included here.

Applicant: The owner of land proposed to be subdivided or his representative.

Buffer: Land area within which adequate vegetation is maintained or provided to visibly separate or screen one use from another and/or to minimize potentially negative impacts on surrounding areas, e.g., shield or block noise, light or other nuisances, reduce water pollution. Also known as a “vegetated buffer.”

Buildable Area: Land area of a parcel excluding non-buildable area.

Buildable Lot: The smallest lot area established by the zoning ordinance on which a use or structure may be located in a particular district.

Building Envelope: Area of a building lot identified on a subdivision plan indicating the allowed limits of clearing and grading, and within which all structures, and, when applicable, the well and septic systems, including the tank and leach field, shall be located.

Conservation Easement: A permanent legal restriction against future development and other activities as specified in the conservation easement deed. An easement may be worded to permit or restrict public access, allow or disallow recreational uses, allow or disallow other uses, such as limited development, agriculture, or forestry. Easements are tied to the title of the land, regardless of subsequent ownership.

Conservation Subdivision: An alternative form of residential development where, instead of subdividing an entire tract into lots of conventional size, a similar number of housing units are arranged on lots of reduced dimensions, with the remaining area of the parcel permanently protected as designated open space. Also referred to as “open space subdivision.”

Deed Restriction: A restriction on the use of land usually set forth in the deed for the property. Also known as a “restrictive covenant.”

Designated Open Space: Reserved land that is permanently protected from further development and remains in a natural condition or is managed according to an approved management plan for natural resource functions, e.g., forestry, agriculture, habitat protection, passive recreation, or limited uses as approved by the planning board under this ordinance as part of a conservation subdivision.

Easement: The right or privilege that a person may have in another person's property, often for the purposes of installing and maintaining utilities and drainage ways or allowing a right of passage.

Homeowners Association: A private corporation, association, or other legal entity organized in accordance with state law and established by the applicant or the member individuals for the benefit and enjoyment of its members, including oversight and management of common open space, designated open

space, and/or shared facilities.

Non-buildable Area: Land area that cannot be counted toward the minimum lot size under a conventional subdivision, including areas with the following characteristics: wetlands or wetland soils as defined by RSA 482-A: 2, X; slopes greater than 25 percent; submerged areas; utility rights-of way; land area within the 100-year floodplain; or land that is restricted from development by covenant, easement or other restriction.

The definition of non-buildable area should be customized for each community based on its restrictions regarding what land area can be counted toward the minimum lot size under the conventional subdivision requirements.

Open Space Common: Land within or related to a development, exclusive of land dedicated as designated open space, not individually owned, which is designed and intended for the common use or enjoyment of the residents of the development and/or the town and may include such complementary structures and improvements as are necessary, appropriate and approved by the planning board.

Restrictive Covenant: A restriction on the use of land usually set forth in the deed for the property.

Sketch Plan: A preparatory sketch of the preliminary subdivision layout that does not include engineering details, which is used to support a general discussion with the planning board as to the form of the plat and the objectives of the zoning ordinance and applicable subdivision or site plan regulations.

IV. AUTHORITY AND APPLICABILITY

- A. To facilitate the implementation of the goals of the master plan, all subdivisions for residential use shall use a conservation subdivision design approach, unless exempted under Section IV.B or granted a special use permit under Section IV.C.

The model ordinance is written to encourage the use of conservation design subdivisions, but to allow the planning board to entertain a conventional development plan under a special permit or conditional use process (rather than seeking a variance from the Zoning Board of Adjustment). Under this approach, the use of the conventional subdivision design is subject to an additional review and approval step by the planning board, making it somewhat more difficult for the applicant to pursue conventional subdivision design.

Each community must decide whether it wishes to require the use of conservation subdivision design for residential subdivision development or leave the choice up to the applicant. A community can also require the use of conservation subdivision design for specific areas or situations, such as specific zoning districts or on any parcel with high natural resource value (e.g., on parcels containing rare or outstanding habitat features, buffer areas to wetlands, streams, rivers, ponds, and lakes, etc.), or when certain cultural features are present such as historic structures or existing trail networks.

This model ordinance does not restrict the use of the conservation subdivision approach to larger parcels of land. Instead, the level of protection afforded to the open space is expected to vary. Although smaller parcels of conserved land are generally not viable candidates for a conservation easement held and enforced by a third party, such areas can be protected through deed restrictions. The open space is protected over time by ensuring that neighboring land owners in the subdivision and abutters, a community association, and the town all have the legal authority to enforce the deed restrictions.

B. Exemptions: Subdivisions meeting any one of the following criteria shall be exempt from the requirements of this section, unless a landowner elects to follow the standards of this section.

If conservation subdivision is required as the primary form of residential subdivision, the community might wish to identify specific conditions under which conservation subdivision is not required, such as when a small number of lots or dwelling units are created with no future opportunity for further subdivision or when very large lots are created, e.g., 11-25 acres or greater per lot. A lot that is at least 11 acres in size is eligible for the current use tax assessment for 10 acres.

1. The subdivision creates lots that are, on average, equal to or greater than 479,160 square feet (11 acres) in size and provided the deed for each lot created contains a restriction prohibiting the further subdivision of the lot;
2. The parent parcel is nine acres or less in total size and the subdivision does not require a new road; or
3. The subdivision creates five or fewer dwelling units and does not require a new road.

C. Authorization to Issue a Special Use Permit: Notwithstanding other provisions of (municipality)'s zoning ordinance, authority is hereby granted to the planning board, as allowed under RSA 674:21, II, to issue a special use permit to modify the requirements of this section as follows:

1. The planning board may issue a special use permit for the parcel to be developed as a conventional subdivision when it finds that:
 - a. The parcel is ill-suited for development using conservation subdivision design, or a conventional design provides greater or equal benefits to the community; and
 - b. The conventional subdivision design retains and protects important natural and/or cultural features identified by the planning board and/or the site inventory.
2. The planning board may issue a special use permit for a modified conservation subdivision design to allow for variations from certain requirements of this section as specified herein. Such modifications shall be consistent with the purposes and standards of this section, fall within the guidelines contained herein, and shall not be detrimental to public health, safety or welfare.

Municipalities have the option of granting the planning board the authority to issue a special permit (also known as a conditional use permit) as a means of giving the planning board and applicants greater flexibility to “fit” the development into the landscape by being able to waive or modify some or all of the requirements specified in the conservation subdivision ordinance or to allow certain additional uses in the designated open space when deemed appropriate. The advantage of allowing special permits is that the planning board can work with an applicant to modify a plan when it is in the best interest of the community without forcing the applicant to pursue a zoning variance. The risk, however, is that the applicant and/or planning board may also go too far in relaxing the standards. For this reason, this model ordinance specifies the degree to which the specific standards can be varied under a conditional use or special permit.

- D. **Sequential Subdivisions:** The provisions of this ordinance shall apply to the sequenced development of a parent parcel over time through separate successive applications. When a subdivision is proposed that involves part of a larger parcel or includes lots that are capable of further subdivision, the planning board may require that a site inventory and a conceptual (non-binding) long-range plan be submitted for the entire parcel and used to evaluate the proposed subdivision.
- E. **Review Process:** A subdivision application under this section shall comply with the application and review process specified in the subdivision regulations, except that sections of the subdivision regulations that are clearly not applicable to a conservation subdivision design shall not be imposed on the applicant by the planning board.

The details for the review process are provided in the model language for revising a community’s subdivision review regulations, which follow the model zoning ordinance.

- F. **Legal Review:** Prior to final approval by the planning board, the applicant shall submit for review by the town counsel any restrictive covenants, condominium or cooperative agreements, conservation easement, deed restrictions, or other legal agreements proposed for use in the conservation subdivision. The town counsel shall advise the planning board of the adequacy of such legal provisions. The applicant shall pay all associated costs of the legal review.

V. MAXIMUM DEVELOPMENT DENSITY

- A. **Base Number of Development Units:** The applicant shall choose one of the following methods for calculating the base number of dwelling units that may be constructed on the property:
1. **Formula Approach:** Under the formula approach, the base number of dwelling units is determined by the following formula:

Base Number Dwelling Units =

$$[(\text{Net Area}) \times (\text{Factor}) \div \text{Conventional Minimum Lot Size (\# Dwelling Units/Lot)}]$$

Where Net Area =

$$\text{Total Area of Parcel (sq. ft.)} - \text{“Non-Buildable Area” on the Parcel (sq. ft.)}$$

Conventional Minimum Lot Size = lot size determined for a single-family building, two-family building, or multi-family building (or combination of the above as permitted) based on the conventional zoning requirements.

Non-Buildable Area = any area that cannot be counted toward the minimum lot size under a conventional subdivision or is restricted from development by covenant, easement or other restriction (see definition).

Factor = number determined by the following:

Percentage of Parcel that is Wetlands and/or Steep Slopes*	Factor
0-<10%	0.75
10-<20%	0.70
20-<30%	0.65
30% or more	Use Yield Plan Approach

* Steep slopes are those greater than 25%

The “factor” accounts for area required for a new roadway, right-of-way, and utilities, and reflects the difficulty of developing a site by varying density based on the amount of wetlands and steep slopes.

The number of allowable dwelling units is determined based on the allowable number of units per building under the conventional zoning, where the result is rounded up for single family homes and down to the next whole number for buildings containing more than one dwelling unit.

If the subdivision involves only part of a parcel, the buildable area shall be calculated for that portion of the parcel proposed to be included in the subdivision. If a parcel is located in more than one district, the base number of allowable dwelling units will be determined for each portion of the parcel separately and added together and then rounded to the next whole number.

For example, for a 120 acre parcel in a 3 acre zone (i.e., 3 acre minimum lot size per single family home (1 dwelling unit per building)) with 30 acres of wetlands, the example formula approach above permits 20 dwelling units, as single family homes

$$[(120-30)*0.65] \div 3 = 19.5 \text{ or } 20 \text{ single family homes.}$$

With a 4 acre minimum lot size per two-family building (each building containing two dwelling units), 14 two-family buildings are permitted

$$[(120-30)*0.65] \div 4 = 14.6 \text{ or } 14 \text{ buildings,}$$

$$*2 \text{ dwelling units per building} = 28 \text{ dwelling units.}$$

Communities should evaluate any proposed formula against several recent subdivisions and consider the nature of remaining land in their community. The objective is to define a formula that provides a number of units that is the same or very close to the number that would be allowed under a conventional subdivision approach.

2. **Yield Plan Approach:** Under this approach, the applicant presents a yield plan to the planning board to determine the number of allowable buildings and dwelling units permitted within the conservation subdivision. The yield plan is a sketch plan for a conventional subdivision development that fully complies with the requirements for a conventional subdivision.

Applicants and planning boards must follow all standard procedures for approving variances or waivers in approving a Yield Plan (see *Auger v. Town of Strafford*, No. 2006-646).

3. Exceptions

- a. If more than 30 percent of the area of the parcel consists of wetlands or steep slopes, then the applicant shall use the yield plan approach to determine the allowable number of buildings and dwelling units.
 - b. The planning board may require the preparation of a yield plan if the subdivision creates 20 or more dwelling units as determined by the Formula Approach. The planning board may require the use of the yield plan for determining the permitted number of dwelling units if it finds, upon review of the yield plan, that the characteristics of the site, e.g., soil types, arrangement of wetlands and steep slopes, support fewer than 90 percent of the number of dwelling units permitted by using the formula approach.
- B. **Incentives:** Additional dwelling units and/or lots, not to exceed 20 percent over and above the base number of dwelling units permitted, may be awarded at the discretion of the planning board for any of the following:

Incentives generally are not needed to encourage the use of the conservation subdivision approach, provided the review/approval process is the same as for a conventional subdivision. Incentives are best used sparingly to encourage actions that cannot be required – such as providing full public access, more permanently protected open space, or establishing a permanent conservation easement held by a third-party conservation organization. Too many opportunities for applicants to increase the number of dwelling units allowed can reduce community support for using the conservation subdivision approach.

- 1. Conservation of greater than 50 percent of the buildable area of the parcel within the designated open space shall receive a 5 percent increase in the number of dwelling units allowed for every additional 10 percent of open space protected, up to a maximum increase of 15 percent over the base number of dwelling units allowed.

For example, a 20-unit development with 72 percent of the buildable area of the parcel retained as designated open space would receive two additional bonus units, for a total of 22 units.

- 2. Developments that grant public access, i.e., not limited to residents of the subdivision, to the designated open space shall be eligible for up to

a 10 percent increase in the number of dwelling units allowed.

3. Developments that provide for a permanent conservation easement and that include a stewardship fund payment, acceptable to the planning board and held by the town, a recognized conservation organization, or land trust, shall be eligible for a 10 percent increase in the number of dwelling units allowed.

In this case, the additional dwelling units are provided to encourage the establishment of conservation easements in recognition of the additional work and expense involved in putting the easement in place.

VI. DIMENSIONAL REQUIREMENTS

A. Lot Size Requirements

1. Buildings in a conservation subdivision may be located on individual residential lots, on common lots, or a combination thereof. If more than one dwelling unit will be located on a lot, the ownership and management arrangements for that lot, and the units thereon, shall be included in the subdivision application. The arrangements shall be subject to approval by the planning board in accordance with the subdivision regulations.

The model provides two options for establishing a minimum lot size within a conservation design subdivision. Under the first approach, the minimum lot size is determined by soil-based lot sizing requirements for wastewater management. Under the second approach, the community specifies a minimum lot size, e.g., 50 percent of the minimum lot size under conventional subdivision, but allows for variation from that minimum by special permit.

2. Minimum Lot Size [First Option for a Municipality]

- a. If public wastewater treatment is not available, the minimum lot size permitted shall be based on soil-based lot sizing requirements for wastewater management as specified by the New Hampshire Department of Environmental Services. Developments may utilize individual or community wells and/or septic systems.
- b. The planning board may require lot sizes to be larger than the minimum required under soil-based lot sizing to comply with other requirements of this section, particularly the dimensional and design standards of this section, or to protect human health, welfare and public safety.
- c. If public or community wastewater treatment is provided, lot size shall be the minimum size necessary to comply with the dimensional and design requirements of this section. In no case, shall a lot be less than 5,000 square feet.
- d) The size of the individual lots shall be shown on the subdivision plan and shall be subject to planning board approval based upon its finding that the lot sizes will allow for the creation of a high-quality living environment for the residents of the subdivision and the

abutting property owners.

3. **Minimum Lot Size** [Second Option for a Municipality]

[Insert a minimum lot size table for your community]

The municipality determines standard minimum lot size(s) within a conservation design subdivision for each zoning district, but allows for flexibility by including the section below on alternative lot sizing.

4. **Alternative Lot Sizing:** The planning board may authorize variations from the minimum lot sizes specified above by special use permit, provided the planning board determines that the following conditions are met:

- a. All lots comply with the New Hampshire Department of Environmental Services requirements for subsurface wastewater management (developments may utilize individual or community wells and/or septic systems); and
- b. The goals and design specifications of this section are otherwise achieved.

B. Specifications for Individual Lots

1. A building envelope shall be identified for each new lot in compliance with the standards in Table 1 to ensure an adequate separation between new primary structures on the subdivided parcel and between new primary structures and existing structures on adjacent lots. For new lots, the standard is applied to the *average* distance between building envelopes on adjacent new lots, i.e., the actual distance of separation may vary and be less than the minimum specified for some lots, provided that, on average, the minimum distance of separation is achieved across all new lots created. Variations from this standard may be granted by the planning board under special permit provided that the intent of this section is met and an adequate vegetated buffer is maintained or provided between new structures.

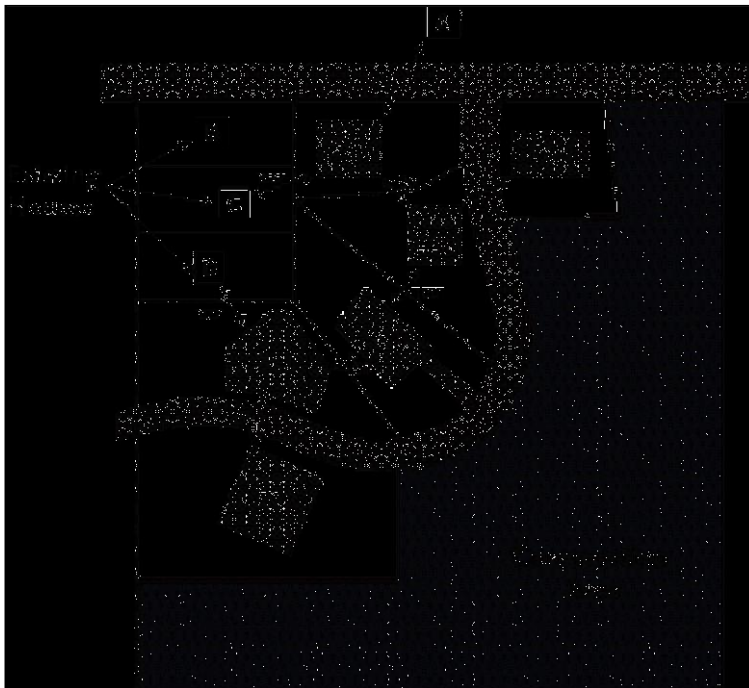
Minimal dimensional standards are set under this approach to allow flexibility in the design and layout of the subdivision and maximize the open space conserved. For this reason, frontage requirements are eliminated and set back requirements are minimized. The layout of structures is managed by the required separation between building envelopes. A community should review these specifications for consistency with their objectives for the design of subdivisions within their different zoning districts.

Table 1.4.1 Specifications of Minimum Separation Distances Between Building Envelopes [EXAMPLE: Specify Requirements for Your Community!]

District	Minimum Separation Distance of Building Envelopes for New Lots From Existing Structures on Adjacent Parcels	Minimum Average Separation Distance Between Building Envelopes for New Lots
Rural – large lots (4+ acres)	100 feet	75 feet
Rural Residential (2-3 acre lots)	75 feet	50 feet
Residential (1 acre lots)	*40 feet	*30 feet
Village Development (< 1 acre lots)	*30 feet	*20 feet

* The minimum separation distance may be reduced to the average separation between structures on neighboring properties.

Figure 1.4.3 Building Separation in a Conservation Subdivision



Six new lots with building envelopes meeting all standards:

Average 75' between envelopes on new lots, 100' minimum between envelope and existing homes.

Separation Distances

BE 1 to BE 2 = 65'
 BE 2 to BE 3 = 60'
 BE 3 to BE 4 = 100'
 BE 4 to BE 5 = 80'
 BE 5 to BE 6 = 75'
 Average = 76'

C to BE 5 = 100'
 D to BE 2 = 100'

2. Principal structures located on a common lot (and within a common building envelope) shall be no less than 15 feet apart and shall conform to the requirements of the town's building code and the NFPA fire protection codes based upon the type of construction and proposed use.
3. Height limits for structures shall be determined by the underlying zoning for the parcel, unless variations are granted by special permit.
4. Building envelopes shall provide for a minimum setback of at least 10 feet from the lot boundaries.
5. Building envelopes shall be delineated to ensure that no structures shall be less than 15 feet from the edge of pavement of the roadway.
6. Building envelopes shall be setback a minimum of 50 feet from wetlands and shorelines (unless subject to a greater setback requirement under local zoning or state law). No structures or supporting utilities may be constructed on wetland.
7. Lots may be irregular in size and shape provided they conform to the natural topography and features of the parcel (e.g., the lot lines follow an existing stone wall, stream, or other natural dividing feature).
8. The planning board may authorize variations from the above standards, except for provision (6) pertaining to the setback from a wetland/shoreline or any requirement covered by state regulation or addressed elsewhere in this ordinance, by up to 50 percent by special use permit issued pursuant to Section IV.C.2, for the purpose of providing flexibility in the design of the subdivision to meet the objectives of this section or to support the creation or continuation of a traditional village-style development pattern.

C. Design Standards for Developed Areas: Subdivision plans shall comply with any additional applicable standards governing the location and layout of lots and structures found elsewhere in this ordinance and as set forth in the Subdivision Regulations.

VII. OPEN SPACE REQUIREMENTS

- A. At least 50 percent of the buildable area and 80 percent of the non-buildable area of the parcel shall be permanently protected as designated open space subject to the additional conditions below. The planning board may authorize a slight reduction in the area of designated open space by special use permit, when it finds that (1) the reduction is necessary to enable the use of the conservation subdivision approach based on the characteristics of the parcel, and (2) the proposed subdivision adequately meets all other requirements of this ordinance. In no case, shall the designated open space represent less than 50 percent of the total area of the parcel.

A community might decide to require a greater or lesser percentage of the parcel to be conserved or vary the percentage for different areas of town or dependent on the specific characteristics of the parcel. For example, a community might require 80 percent of the total area of a parcel to be conserved in areas with high-value natural resources.

- B. Portions of the parcel that comprise part of an individual house lot, roadway, driveway, access road, roadway right-of-way, other new or existing right-of-way, utility easement, private or community leachfields or other components of a wastewater management system, stormwater management structures, or are part of a required buffer between any new structure and an existing right-of-way, or any area that is less than 100 feet wide shall not count toward the calculation of the designated open space.
- C. The location, layout, and management of the designated open space shall conform to the standards and process set forth in the Subdivision Regulations.

The model envisions that the predominant purpose of the designated open space is preservation of natural resource functions, and thus, allows only limited uses of the open space. A community should decide what uses are appropriate in the designated open space based on your community's goals and objectives in utilizing this technique. A community might decide to vary the uses allowed depending on the location of the development or the types of natural and/or cultural resources present. For example, all uses of the open space might be prohibited if an area to be conserved contains critical wildlife habitat; passive recreation, agriculture and forestry might be permitted in a development in a rural zone; while more intensive recreation, such as ball fields or tennis courts, might be permitted in an area targeted for higher density growth. Alternatively, a community could establish a process to determine the allowable uses based on the characteristics of the site and the recommendations of a natural resource specialist.

- D. Any use of the designated open space is subject to approval of the planning board and conservation commission and shall demonstrate that such uses shall not negatively impact the natural and/or cultural amenities preserved through the conservation subdivision design.
- E. The following uses generally are permitted in the designated open space, unless specifically prohibited or restricted as a condition of subdivision approval for the purposes of protecting important natural features or characteristics of the parcel:
 - 1. Forest management.
 - 2. Agricultural cultivation and pastures.
 - 3. Passive (non-motorized) trails and recreational uses.
 - 4. Snowmobile trails.
- F. Up to 50 percent of the designated open space may be permitted by special permit to be used for the following. The planning board may impose specific criteria or restrictions on such uses as deemed necessary to support the goals of this section:
 - 1. Agriculture involving animal husbandry and/or boarding.
 - 2. Active outdoor recreation uses, including formal playgrounds and fields.
 - 3. Parking areas for access to the designated open space.
 - 4. Individual or community wells provided that this use was approved as

part of the subdivision plan and that appropriate legal arrangements are established and approved by the planning board for the maintenance and operation of these facilities.

- G. The removal of soil, trees and other natural features from the designated open space is prohibited, except as consistent with conservation objectives or permitted uses as provided above.
- H. The designated open space shall be retained in a natural, undisturbed state, except for those activities permitted and approved as provided above, or as required for active management according to a conservation agreement and management plan written by a qualified natural resource professional.

Figure: Rural Conservation Subdivision Example

16.5 acre parcel (1 acre wetlands and 1.5 acres steep slopes)

Conventional Zoning: 2 acres per dwelling, 3 acres for 2-family

Calculate Number of Allowed Units

Number of single family homes =

$$[(718,740 \text{ sq ft} - 43,560 - 65,340) \times (\text{factor} = 0.70)] \div 86,720 = 4.9 = 5 \text{ homes}$$

20% bonus = 1 additional single family home = 6 homes

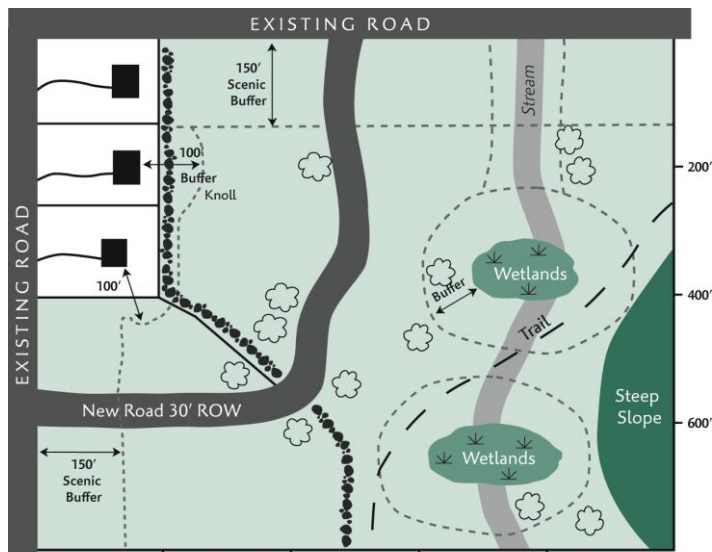
Number of 2-family structures =

$$[426,888 \div 130,680 = 3.3 = 3 \text{ structures} \times 2 \text{ units per building} = 6 \text{ units}]$$

Step 1:

Identify natural and cultural features and required setbacks

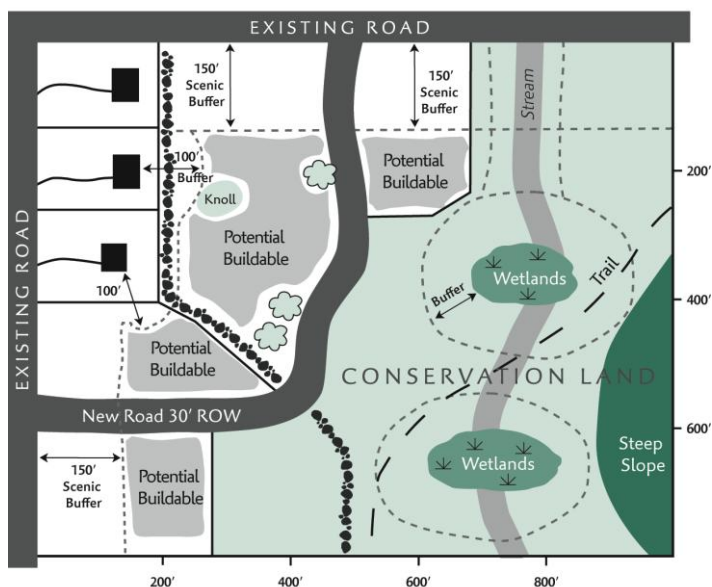
- minimum 100' setback from existing homes
- minimum 50' setback from wetlands
- minimum 150' setback along existing roads



Step 2:

Delineate conservation areas and potential area for building (possible building envelope)

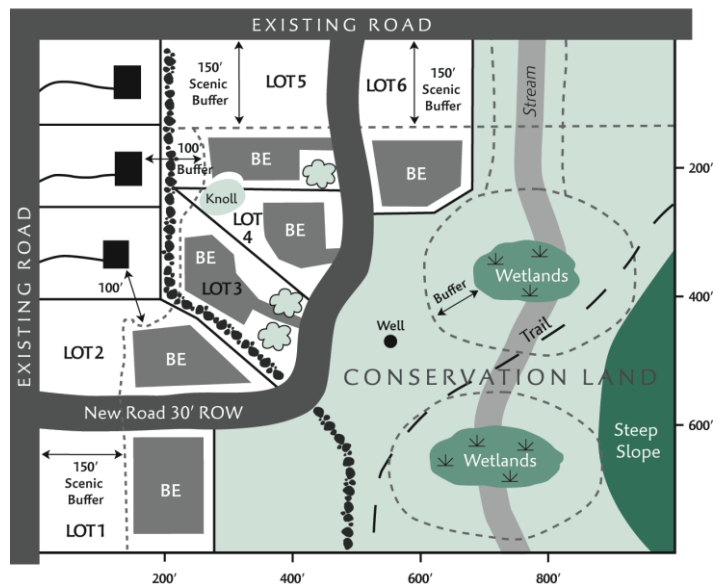
- 9 acres conserved = 54% of buildable area)



Step 3:

Delineate building envelope and lot lines (for single family homes)

- minimum 75' average separation between new building envelopes (BE)
- minimum 15' from edge of pavement
- minimum 10' from parcel boundary (unless another setback is in effect)
- minimum lot size = 21,780 sq ft
- Community well, individual septic
- Type 3 soils, open space development



AMENDED PROCESS AND REQUIREMENTS FOR SUBDIVISION APPLICATION AND APPROVAL

AUTHORIZATION OF PRE-APPLICATION REQUIREMENTS

Model Resolution Language

Pursuant to RSA 674:35, I, the planning board is hereby authorized to require preliminary review of applications for the subdivision of land.

Pursuant to RSA 674:43, I, the planning board is hereby authorized to require preliminary review of site plans for nonresidential uses or for multi-family dwelling units.

Pursuant to RSA 674:35, I, a municipality's governing body must authorize the planning board to require preliminary review of applications for the subdivision of land (and for site plans, under RSA 674:43, I). The ability of the planning board to require applicants to participate in preliminary or pre-application meetings is critical to providing planning boards early involvement in the subdivision design process and will greatly increase their ability to influence the ultimate design and layout based on the broader municipal goals and the characteristics of the site. The pre-application meeting can also foster a collaborative relationship between the board, the abutters, and the applicant.

REVISIONS TO SUBDIVISION REGULATIONS AND APPLICATION PROCEDURES

(once authorized by resolution at town meeting or by city/town council)

The following text is intended to be added to a community's existing subdivision review regulations and to apply to all subdivision applications, both conventional and conservation design.

I. PRELIMINARY REVIEW

A community will need to determine if all subdivisions are required to participate in a preliminary review prior to submitting a formal application and if not, what types of projects are exempt, e.g., minor subdivisions.

All applicants for subdivision review are required to participate in a preliminary review process with the planning board. The purpose of this process is to discuss the characteristics of the site and proposed plan for development in conceptual terms. The preliminary review process is further designed to acquaint the potential applicants with the formal application process and particular information that the planning board may request, to suggest methods for resolving possible problems in the development design and layout, and to make the potential applicant aware of any pertinent recommendations in the master plan, zoning, or regulations to the property in question.

A. Limits of the Review

1. The preliminary review shall be conducted at a posted meeting of the planning board after identification of and notice to the abutters, holders of conservation, preservation or other restrictions on the site or abutting parcels, and the general public under RSA 676:4 I(d).
2. The preliminary review shall not cause the proposed plan to be a pending application or proceeding, and as such, no processing time limits, as defined in RSA 676:4 shall apply.
3. The preliminary review shall be informational and shall not bind the applicant or the planning board. However, the planning board shall be entitled to make recommendations with respect to the material presented during the preliminary review to assist the potential applicant in preparing a formal application. No decisions relative to the plan shall be made at the preliminary review.
4. Public input will be accepted.
5. Any documents provided to the planning board will be made part of the record for future reference purposes.
6. The planning board shall enter into the minutes any suggestions, recommendations, or other factors discussed.

B. Preliminary Review Documents

Applicants shall submit the following materials at least 30 days in advance of the preliminary review meeting with the planning board. Materials shall be submitted to the town office, c/o chairperson of the planning board, according to the filing schedule established by the planning administrator. All materials must be submitted before a preliminary review can be scheduled.

1. **Request for Preliminary Review.** Applicants shall submit the appropriate form, available from the town office, a list of the names and addresses of abutters obtained from town records not more than five days before the date of filing of the application, and application fee.
2. **Site Context Map.** The site context map shall be drawn at a size adequate to show the relationship of the proposed subdivision to the adjacent properties and to locate the subdivision within the municipality, e.g., 1 inch = 400 feet. The site context map shall include the following:
 - a. Existing subdivisions in the proximity of the proposed subdivision, including building locations.
 - b. Locations and names of existing streets.
 - c. Boundaries and designations of zoning districts.
 - d. Watershed and subwatershed boundaries.
 - e. An outline of the subject parcel and the proposed subdivision.

Municipalities should review their current standards and requirements for site maps and site information and provide consistency between the preliminary review and formal application materials.

3. **Site Inventory and Map(s).** The site inventory map(s) shall be at a scale of one inch equals 100 feet (unless another scale is mutually agreed upon for larger projects) and shall involve an individual or team with the necessary training in natural resources and who shall certify the information submitted. The inventory and map(s) shall include, at a minimum, the following:
 - a. The proposed name of the subdivision, north arrow (true meridian), date, and scale.
 - b. The boundaries of the parcel based upon a standard boundary survey prepared by a registered land surveyor and giving the bearings and distances of all property lines.
 - c. Existing structures or easements on the site; if none, so state.
 - d. The topography of the site at an appropriate contour interval depending on the nature of the use and the character of the site.
 - e. The major natural features of the site and within 500 feet of the site, including wetlands, vernal pools, streams, ponds, rivers, riparian areas, floodplains, stratified drift aquifers, areas of significant wildlife habitat (i.e., areas identified by the NH Wildlife Action Plan as the highest condition habitat in the state or region; habitats of endangered or threatened wildlife, other habitats of local significance as identified by the conservation commission or other conservation organization), mast stands, boundary trees, noteworthy tree specimens, scenic views or areas, significant geologic features, ridgelines, slopes in excess of 25 percent, agricultural soils of local and statewide significance, high quality

forest soils, meadows, and any other important natural features. Wetlands on the site shall be identified and delineated by a New Hampshire Certified Wetlands Scientist and certified by the person performing the delineation. Information on adjacent properties may be from published sources and available state, regional, and local data.

- f. Visible or known human-made features of the site and within 500 feet of the site, including historic or cultural features, stone walls, roads, driveways, fences, trails, historic structures or remnants, archeological resources, graveyards, cemeteries, historic or current waste disposal sites, and any other important features; if none, so state.
- g. Soils on the site based on a soil survey. The planning board may require the submission of a high intensity soil survey if it determines that a HISS is necessary to determine if the proposed density of development conforms to the zoning requirements or to evaluate the appropriate use of the property.
- h. Vegetative cover conditions on the property.
- i. Views onto and off of the property, with accompanying photographs.
- j. Watershed and subwatershed boundaries.
- k. Location of drinking water supplies (public and private) and protective radii.
- l. All areas subject to covenant, easement or other restriction limiting the potential development and/or use of such areas, including resource boundaries and buffer areas subject to local, state, and/or Federal regulation. The nature of the restriction shall also be noted.
- m. Location and size of existing utilities or improvements to the site; if none, so state.
- n. If not served by public water, any potential sources of fire protection water supply within one half mile of the site, including public water mains, existing fire ponds, or other possible sources.
- o. Preliminary identification of those areas of the site with the most significant conservation value based on the assessment of the site.

4. **Conceptual Plan of Proposed Development.** Applicants shall submit a conceptual plan for the development of the subject parcel that reflects the characteristics of the site as detailed in the site inventory and map(s) and its location within the community as indicated in the site context map. The conceptual plan shall be prepared at the same scale as the site inventory map and be provided as both a translucent sheet, which can be overlaid onto the site inventory map(s), and solid plan.

A conceptual plan shall be a draft plan, which does not include engineering details, but is drawn to scale and indicates the following:

- a. Proposed location of any new roadway.
- b. Proposed residential lots, building envelopes, including the possible location of a well and septic system, when applicable, and potential house sites for each lot.
- c. Existing and proposed features and amenities, including common areas, trails, or community buildings, etc.

- d. Proposed boundaries of the designated open space.
- e. A narrative description of the proposed approach for providing for drinking water supply, waste water treatment, stormwater management, and landscaping.

Applicants shall demonstrate that their conceptual plan is consistent with the following approach for designing a subdivision:

- a. **Step One: Identify Conservation Areas.** Identify those areas of the parcel containing or supporting important natural resource features and functions, as listed in the subdivision regulations or otherwise identified by the planning board for priority consideration for inclusion within the designated open space. If not included in the designated open space, other protective mechanisms, such as a substantial setback of development or maintenance of an undisturbed buffer around the feature, shall be identified.
- b. **Step Two: Locate House Sites and Building Envelopes.** To the maximum extent feasible, house sites and building envelopes shall be located outside of those areas delineated in Step One. The location of the house sites and building envelopes shall also reflect the design objectives identified elsewhere.
- c. **Step Three: Align Streets and Trails.** The minimum length and network of streets necessary to access each house lot shall be identified, subject to the road standards of the Town and with consideration given to conforming the street to the natural landscape. Proposed trails shall be identified where access to the designated open space is appropriate and/or to provide for pedestrian circulation within the development as well as pedestrian access to areas outside the development.
- d. **Step Four: Identify Lot Lines.** Lot lines for each house site, or group of homes on a common lot, shall be identified. The placement of the lot lines shall give consideration to those areas identified in Step One as well as conform to the natural features of the landscape to the greatest extent possible, e.g., follow stone walls, lines of boundary trees, streams. The delineation of lots shall also consider the privacy provided for individual homeowners and opportunity for future owners to reasonably expand the structures on the lot.
- e. **Conceptual Long Range Development Plan.** When a subdivision will not utilize the entire parcel and there is potential for future subdivision or development of the parcel or any of the lots being created, the application for preliminary review shall include a conceptual long range development plan showing the potential utilization of the lots and the balance of the parcel not being subdivided. The conceptual long range development plan is a sketch plan with no engineering details, intended to be conceptual in nature, to rely on published data about natural resources relevant to the parcel, and to demonstrate that the current subdivision proposal will not compromise important conservation values or the long term development of the parcel as a conservation design subdivision. This plan shall show the relationship of the proposed subdivision area to the balance of the parcel and to adjacent land. This plan shall analyze the conservation and development potential of the remaining area of the parcel and shall show, in general terms, the potential street network, open space areas, and development areas in a manner that demonstrates that both the proposed development and the future development can occur so that it conforms to the requirements for conservation design subdivisions and

preserves the significant natural resource and conservation values of the entire parcel.

C. Technical Review

At the discretion of the planning board, the board may request that the applicant pay a reasonable fee to provide for a third-party technical review of the information provided on the site or the conceptual plan of the proposed development submitted for the preliminary review. The fee shall be due at the time of submission of a formal application. A formal application for subdivision review shall not be deemed complete until the technical review of the preliminary review materials is conducted, or 30 days after the preliminary review materials and the fee for the technical review are received (provided all other requirements for a formal application are met), whichever is earlier. The applicant may elect to submit the fee for this technical review in advance of the formal application to expedite the review process.

D. Site Inspection

The planning board may conduct a site inspection of the subject property to review existing conditions, field verify the information submitted, and investigate the preliminary development proposal. The board may schedule this inspection before or after the preliminary review meeting or decide not to hold a site inspection at this time.

II. FORMAL APPLICATION REVIEW PROCESS

[A community should evaluate its existing formal application procedure for consistency with the pre-application procedures in this chapter.]

III. DESIGN STANDARDS: SUBDIVISIONS

These standards will augment any existing design standards guiding subdivision layout. Most of these standards are appropriate to apply to all types of subdivision development, not just to conservation subdivisions. Those design criteria intended to apply solely to conservation subdivisions are listed separately.

The following design standards are intended to improve the character and aesthetic qualities of the development and to minimize its impact on the natural and cultural features on the site. Variations from these standards may be granted by the planning board provided that the overall intent of this section is achieved by the alternative design.

Readers should also review the design standards specified in several other chapters, including Stormwater Management, Wildlife Habitat Protection, and the Water Resource Protection chapters for additional provisions they might wish to apply.

A. Lot Configuration and Design

The following design standards are intended to improve the character and aesthetic qualities of development and to minimize impacts on natural and cultural features on the site. The planning board may require development plans to be certified by an individual with professional training in

neighborhood design.

1. Minimum Impact to Natural and Cultural Features. Individual lot lines and building envelopes shall, to the extent possible, conform to the natural contours of the site and be delineated to minimize negative impacts on the natural and cultural resources of the site as identified by the planning board and/or site inventory.

- a. The location and orientation of individual building envelopes and building sites shall be designed to maintain the natural topography and drainage patterns, to preserve important natural features in their natural condition, to maximize the potential for use of passive solar energy for light and heat, to minimize disturbance of natural vegetated cover, and to minimize grading, cut-and-fill, and soil removal.
- b. Topography and natural drainage ways shall be treated as fixed determinants of road and lot configuration rather than malleable elements that can be changed to allow for a preferred development scheme. Land disturbance and cut-and-fill shall be minimized.
- c. The removal or disruption of historic, traditional, or significant uses, structures, or architectural elements shall be minimized.
- d. Significant trees, boundary trees, stone walls, wetlands and streams and other important natural features not included within the designated open space should be incorporated along the edges of individual lots or along a path or roadway, rather than transected by lot lines or a roadway.
- e. The planning board may require the designation of protected, naturally-vegetated buffer strip of 50 feet or more around water resource features, e.g., lakes, ponds, streams, wetlands, or other natural features that may be adversely affected by erosion or stormwater runoff. Such areas may be required to be revegetated if they were recently cleared prior to subdivision approval or cleared during construction.
- f. Stream and wetland crossings shall be eliminated whenever possible. When necessary, stream and wetland crossings shall comply with state recommended design standards to minimize impacts to flow and animal passage (see NH Fish and Game Department, 2008).

See chapter on Wildlife Habitat Protection for a more extensive set of criteria to minimize impacts on wildlife through site design.

- g. A building envelope shall be identified for each lot. Future construction on the lot is encouraged, but not required to be located within the identified building envelope for each lot; however, construction outside of the designated building envelope shall comply with the setback requirements for a conventional development.
- h. Building envelopes, and/or areas of contiguous clearing, shall generally be limited to a maximum area of 21,780 square feet (1/2 acre) for an individual building or up to 87,120 square feet (2 acres) when multiple buildings are located on a common lot.

See chapter on post-construction stormwater management for more information on recommended stormwater management practices, including additional discussion on restricting land disturbance (clearing, grading, cut and fill), impervious cover and off-site drainage.

2. **Minimum Visual Impact.** Individual lots and building envelopes shall be delineated so as to mitigate the visual impact of new development on views from existing roadways, adjacent properties, and offsite vantage points.

- a. At its discretion, the planning board may prohibit the placement of building envelopes in visually prominent areas that cannot be adequately screened.
- b. Development within open fields shall be discouraged. If development must be located within open fields due to constraints elsewhere on the site, building envelopes should not be located on prime agricultural soils and/or should be located at the edges of the field to the maximum extent possible. Additional landscaping may be required to provide a sufficient visual buffer for new development.
- c. To the extent practical, building envelopes shall be delineated to maximize the privacy afforded to each dwelling unit, by, for example, positioning homes to eliminate direct sight lines to neighboring homes and to prevent a building from being positioned directly above (or “perched” above) another building on a vertical slope, unless an adequate separation distance and vegetated buffer exists or is provided.
- d. The planning board may require a vegetated buffer to provide screening between developments and/or between development and public roadways.
- e. Lots that have frontage on an existing public road shall be laid out to minimize the number of curb cuts onto the existing road through the use of shared or common driveways or other methods. The number of curb cuts and distance between them shall be subject to planning board approval.
- f. Lots in the rural, agricultural or low-density residential zones having frontage on an existing public road may be required to maintain a 150 foot vegetated, screening buffer from the existing public road to minimize the effect of the development on the streetscape. The buffer area shall remain free of buildings, parking, or other structures. This buffer area shall be protected by a deed restriction on the subject properties.

Each community should evaluate if and where they want to require a vegetated setback and/or variation in lot layout and building envelope setback. These standards are intended to help maintain the “rural character” within the subdivision and along existing roads. In village situations, new development should be visible from public ways and contiguous with existing development.

- g. The setback of building envelopes and structures from the roadway in rural areas are encouraged to vary from lot to lot within the subdivision. Applicants are further encouraged to vary lot sizes, lot dimensions, and the location of building envelopes and structures within the subdivision to retain significant, natural vegetation along the road; provide increased privacy for residents on adjacent lots; and increase the visual variety provided by the arrangement of homes within the subdivision.

3. **Landscaping and Tree Preservation.** At the request of the planning board, an applicant shall prepare a detailed landscaping plan and/or tree preservation plan.

- a. The landscaping plan shall identify the areas of existing natural cover to be retained as well as new landscaping to be provided on the site, including specific types and sizing of plantings with a preference for native species. The landscaping plan should provide reasonable privacy for individual homes, provide a visual buffer of the development, and improve the overall aesthetics of the development.
 - i. The planning board may require revegetation of any setback or buffer area that was substantially cleared prior to or during the subdivision development to ensure adequate visual screening of the new development, particularly for setbacks to existing roadways and neighboring structures, or within the development itself.
 - ii. The planning board may require the planting of shade trees within all subdivision layouts where residential, commercial or industrial development is to take place.
- b. When requested by the planning board, the landscaping plan shall include a tree preservation plan, which shall identify all trees greater than 15 inches in diameter at 4 feet above the ground, indicate which trees will be retained, and detail a plan to protect those trees, including the root zone, during construction.
- c. Landscaping plans may be submitted to the conservation commission for its review.

4. Additional Design Guidelines for Conservation Subdivisions

- a. Building envelopes on individual or common lots should be set back as far as possible from the boundary of the adjoining designated open space, consistent with other design parameters of this section, to augment and protect the integrity of the open space area.
- b. Consideration should be given in the layout of the subdivision to provide each dwelling unit with access and/or views onto the designated open space.
- c. At the discretion of the planning board, groupings of buildings in the rural zone(s) may be limited to six buildings (containing single or multiple dwelling units) together in a “pod” formation (on individual lots or on a common lot) with a vegetated buffer of 100-300 feet separating the groupings. Larger buffers (200-300 feet) may be required depending on the size of the proposed structures, the nature of the existing vegetation, and the elevation change in the area of concern.

The restriction on the number of buildings that may be clustered together in a contiguous grouping or “pod” is intended to provide for natural visual breaks in the developed area of the parcel to address concerns about the potential negative visual impact of tightly clustering a large number of homes in a rural area characterized by low-density and dispersed development. This standard may not be appropriate or necessary in all areas of a community; thus the model allows for this to be applied at the discretion of the planning board. Alternatively, a community might apply this requirement only in certain zoning districts.

- d. A septic leach field may be located outside of the lot line boundaries provided the requirements of the New Hampshire Department of Environmental Services are met, including appropriate legal provisions to allow for maintenance and replacement.
- e. Shared driveways are permitted and encouraged where appropriate to access individual

lots.

- f. Other design requirements that apply to all residential subdivisions shall continue to apply, when appropriate. These may include, but are not limited to, landscaping standards, street and neighborhood lighting provisions, utility placement, erosion and sediment control, and post-construction stormwater management.

B. Village Design Standards

The following standards provide guidelines for the layout of a new residential and/or mixed use development in a traditional village format when such an option is feasible under the applicable zoning, i.e., frontage and set back requirements, allowable uses, etc.

1. Lots within a village-style layout should have a maximum frontage of 70 feet.
2. Lots within a village-style layout should have a maximum front setback of 20 feet.
3. Garages and Secondary Structures.
 - a. Attached garages must be flush or (preferably) set back from the front wall or façade of the principle building and must be architecturally integrated with the principle building.
 - b. Detached garages or other secondary structures must be flush with or set back from the front wall or façade of the principle building. Detached garages and other secondary structures are encouraged to be located behind principle structures.
 - c. No more than two garage doors facing a street may be located in a row, and such rows of garage doors must be separated from any other garage door facing a street by at least ten feet.
4. Houses on opposite sides of the street should be located between 70 feet and 100 feet across from each other, except along a boulevard, which is defined as a divided street with a center landscaped strip at least ten feet wide, and except when buildings face onto greens, commons, or other open space.
5. Buildings should be of at least one-and-one-half story construction, but no more than three stories. Public or commercial buildings containing significant architectural features, such as a steeple or clock tower, may be higher than three stories if the height of the building is consistent with the overall village design of the development.
6. Villages shall be designed in a pattern of interconnecting streets and alleys, defined by buildings, street furniture, landscaping, pedestrian ways, and sidewalks. The layout should be suited to the existing topography and other natural features of the area to minimize cut-and-fill and grading throughout the site.
7. Sidewalks or pathways, no less than four feet wide, shall be provided along all road frontages of new village-style development.
8. Cul-de-sacs are prohibited.
9. To calm traffic speeds and to provide for pedestrian safety, the use of “T” intersections, small roundabouts, and four-way stops are encouraged.
10. Street trees shall be planted every 35 linear feet within the street right of way.

See chapter on Village Plan Alternative for additional design standards to apply to a new village-style development that incorporates small scale retail and commercial in addition to residential uses.

C. Designated Open Space: Design Criteria

1. The subdivision and development shall, whenever possible, preserve important natural features in their natural condition. The planning board may request an advisory opinion from the conservation commission in determination of the value of the natural features on a site, the boundaries of those natural systems, and the appropriateness of the proposed designated open space to preserve the integrity and function of important natural features.
2. Areas containing the following shall be considered high priority for inclusion in the designated open space:
 - a. Riparian areas, wetlands, streams, and other water resources and buffers for those resources.
 - b. Critical or high-quality habitat areas, including areas identified as the highest statewide or eco-region importance by the NH Fish and Game's Wildlife Action Plan, and buffers or supporting landscapes to these areas.
 - c. Significant stands of trees or significant individual trees.
 - d. High-quality soil resources (forest or agricultural soils).
 - e. Cultural and historic resources, e.g., stone walls, historic structures.
 - f. Existing trails.
 - g. Areas that connect to undeveloped open space on adjacent properties
 - h. Ridgelines, particularly those that continue through the parcel
 - i. Viewshed areas
 - j. Water supply protection areas

A community should review and revise this list of high priority resources based on the resources present in their community and the preservation goals of the community.

3. To the maximum extent possible, the area of designated open space shall include any area identified as a priority for conservation in a local, town, regional or state conservation plan, e.g., areas identified in the Natural Resource Inventory, highest ranked habitat areas identified within New Hampshire's Fish and Game's Wildlife Action Plan. These areas shall be adequately buffered from development by including an additional (minimum) 300 foot distance within the designated open space to the maximum extent feasible. A larger setback from the edge of the designated open space to specific areas may be required depending on the type of habitat and/or sensitivity of a species of concern to human influence.
4. To the extent practical, the designated open space shall be contiguous within the parcel and

adjacent to existing undeveloped land on adjoining parcels to form a continuous, integrated open space system. Particular attention shall be paid to maintaining and expanding existing trail networks.

5. The design of the designated open space and any permitted uses, such as trails, shall be sensitive to minimizing potential impacts to high-quality and/or rare plant communities and habitat areas, particularly those areas potentially supporting rare or endangered species.
6. To the maximum extent practical, a minimum of a 50 foot undisturbed, vegetated buffer around water resource features, e.g., lakes, ponds, streams, wetlands, shall be included within the designated open space. Such areas may be required to be revegetated if they were recently cleared prior to subdivision approval or impacted during construction.
7. No topsoil or vegetation shall be removed from the designated open space, except in conformance with an approved management plan for the area.
8. Access points to the designated open space shall be clearly identified on plans and posted with permanent signage approved by the planning board indicated allowed uses.
9. No more than 5 percent of the designated open space shall be covered by surfaces that impede the infiltration of rainwater into the soil, except as approved by special permit by the planning board.
10. The designated open space shall not be used as the location for dwelling units, roadways, other access, private recreation structures or play equipment, private accessory structures, or other nonresidential buildings or parking except as approved by the planning board.

D. Designated Open Space: Protection and Management

1. Area Boundaries of the designated open space shall be clearly identified:
 - a. Boundaries shall be clearly delineated on plans including plats.
 - b. Boundaries shall be clearly marked and identified as “No Disturbance” areas, except in areas identified for permitted uses, prior to commencing construction activities, including tree cutting, site clearing and grading; temporary markings are acceptable.
 - c. Boundaries shall be clearly and permanently marked in the field with signage approved by the planning board to identify the area as protected open space.
2. Future development in and/or subdivision of designated open space areas shall be prohibited and shall be so noted on the approved subdivision plan/plat.
3. Prior to the approval of the final plat, the designated open space shall be protected and controlled by one or more of the following methods subject to planning board approval:
 - a. Transfer to the municipality as open space, with public access and permanent deed restriction or conservation easement in place (subject to acceptance by the municipality).
 - b. Transfer, with permanent deed restrictions or conservation easement, to a land trust or other recognized conservation organization (subject to acceptance by the organization).
 - c. Ownership by one or more private individuals (separately or in common) or a cooperative legal entity, e.g., a homeowner’s association, with a conservation easement granted to the

municipality and/or recognized conservation or land trust organization.

- d. For designated open space areas of less than 50 acres, ownership by one or more private individuals (separately or in common) or a cooperative legal entity, e.g., homeowner's association, with open space protection deed restrictions enforceable by any land owner within the subdivision, any owner of separate land parcels abutting the open space, or the municipality.

Because deed restrictions are considered a somewhat weaker form of long-term protection against future development, this approach is not recommended to protect large and/or significant parcels of open space. In these cases, every effort should be made to secure a conservation easement for the property to be held by the municipality and/or a recognized conservation organization. However, if the municipality is not willing or able to accept the conservation easement and fulfill the stewardship responsibilities, it may be necessary to accept deed restrictions for larger parcels.

4. In the event that the designated open space is owned by a cooperative legal entity for the benefit of the residents of the subdivision, all common open space shall be governed in accordance with the requirements of New Hampshire RSA 479-A:1-23 inclusive as amended.
5. Deed restrictions and/or conservation easement documents shall be placed on file with the town clerk upon receipt of planning board subdivision approval and duly recorded at the County Registry of Deeds, where appropriate. Such documents shall clearly indicate whether the property is open to the general public, open only to residents of the municipality, or open only to residents of the subdivision.
6. A management plan for the designated open space and facilities shall be prepared and approved by the planning board, which includes the following:
 - a. Identifies the entity assuming responsibility for stewardship and management of the designated open space, including regular inspections to confirm continued compliance with the terms of the subdivision approval and conservation easement or deed restrictions.
 - b. Includes detailed standards and schedules for maintenance of the designated open space, including maintenance of vegetation.
 - c. Allows for municipal maintenance in the event that the maintenance specified under the agreement is not completed and recovery of costs incurred from the designated management entity or the owners of the designated open space within the subdivision.
 - d. Provides that any amendments to the plan shall be reviewed and approved by the planning board.
7. For properties containing open space protected under a conservation easement to be held and enforced by the town or a third-party, a one-time stewardship fee shall be collected and provided to that entity to be held in a separate trust account and used to support the monitoring and enforcement of the conservation restrictions. The amount of the stewardship fee shall be determined by the town or third-party easement holder based on the size and restrictions in place

- on the open space and the requirements of the easement holder.
8. At the discretion of the planning board, an applicant may be required to prepare a brochure identifying the development as a conservation subdivision and detailing the location and use restrictions of the designated open space, and provided to all purchasers of property within the subdivision. Additional copies (hard copies and an electronic format) of the brochure shall be provided to the municipality to be distributed to future property owners.
 9. All documents, including deed restriction language, conservation easements, and the management plan shall be reviewed and approved by town counsel prior to receiving subdivision approval from the planning board.

Overlay Districts

Town of Brunswick, Maine

Streetscape: The public setting in which a structure, site or landmark is located. It is the immediate visible neighborhood of the public right-of-way or public land associated with such a structure, including such features as fences, sidewalks and lights.

(Section 216 was amended in its entirety on 7/1/13 R)

217 Rural Brunswick Smart Growth Overlay Districts

217.1 Purpose

- A. The purpose of the Rural Brunswick Smart Growth Overlay Districts (“overlay districts”) is to reduce the continuing loss of habitat for native species in rural districts, while simultaneously accommodating development in those districts.
- B. The intent of the requirements of section 217.3 is to minimize the removal of woody vegetation that breaks large unfragmented blocks of forest into smaller patches of forest; and to minimize activities that block or limit species movement between unfragmented blocks of forest. These activities are hereafter referred to as “fragmentation”.
- C. The overlay districts are the following
 - 1) Wildlife Habitat Block Districts, are the rural portions of large (greater than 150-acre) continuous blocks of naturally occurring stands dominated by woody vegetation, and;
 - 2) Wildlife Corridor Districts, are the overland connections between Wildlife Habitat Blocks and which provide naturally vegetated linkages that support daily and seasonal species movement between Wildlife Habitat Blocks

217.2 District Boundary

A. Geographic Coverage

The provisions in this section apply only to overlay districts depicted on the Town of Brunswick, Maine Zoning Map as “Rural Brunswick Smart Growth Overlay Zoning Districts” on file in the Department of Planning and Development.

B. Boundary Determination

The overlay district boundaries are based on aerial photo imagery and updated to include land-use changes known to have occurred through December 2005. The boundary of the overlay districts will be adjusted as approved development within the overlay districts occurs.

217.3 Requirements within Overlay Districts

A. Applicability. This section shall apply to the following activities in the overlay districts:

1. Disturbance, as defined in section 111;
2. New subdivisions;
3. Construction, enlargement or placement of a new building or structure;
4. Construction of a road, driveway, or parking lot;
5. Creation or expansion of commercial utility corridors;
6. Installation of a fence within the Wildlife Corridors except:
 - a. fences used as lawn accessories; or
 - b. fences that enclose existing cleared areas; or
 - c. fences erected for standard agricultural purposes; or
 - d. fences lower than 4-½ feet and that have at least 16 inches of clearance between the lowest horizontal part of the fence and the ground.

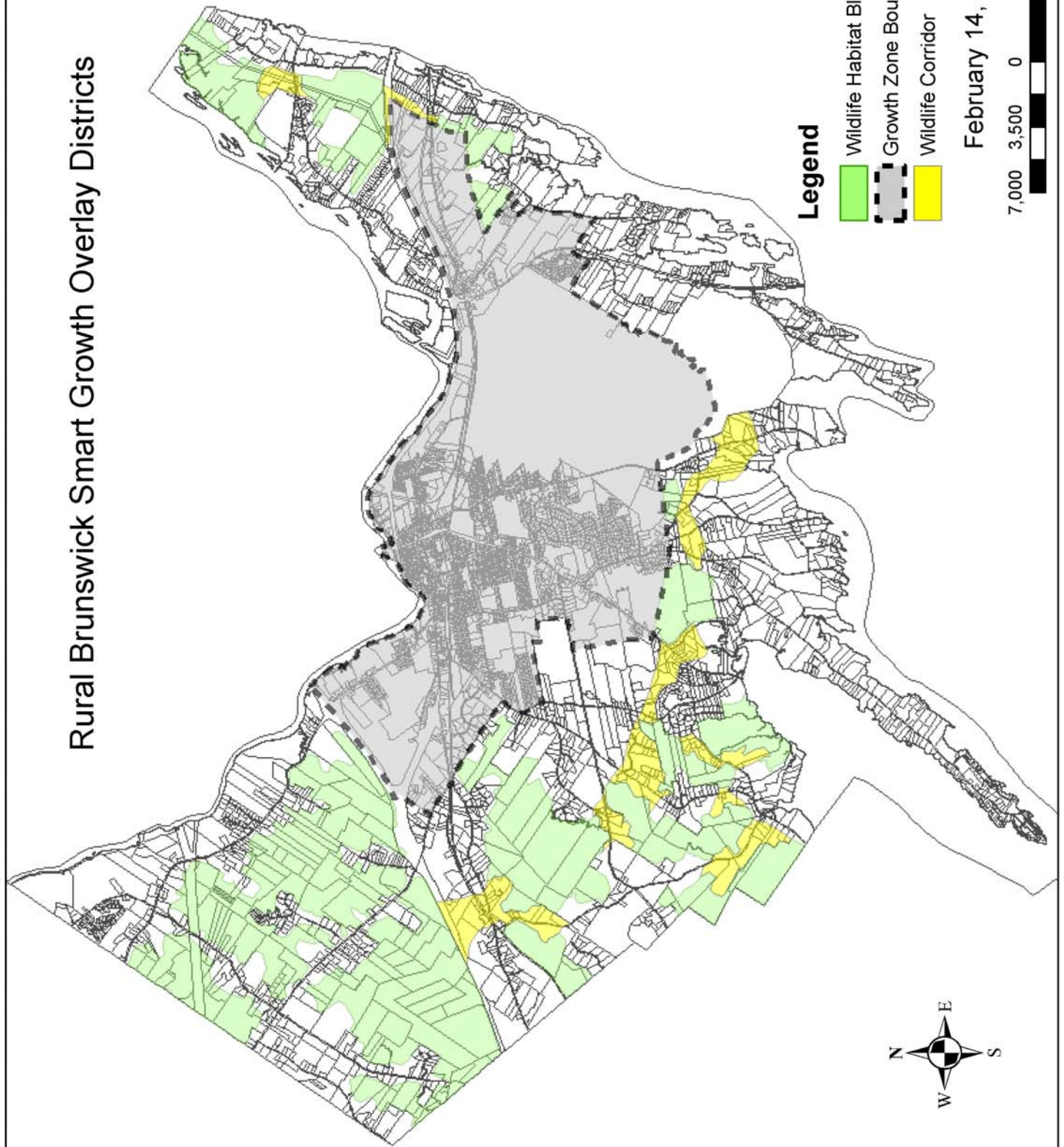
B. Exempt Activities

The following activities do not pose a significant adverse impact on the environmental value of unfragmented blocks and corridors, and therefore do not require approval under this section of the ordinance. The standards of the underlying zone would continue to govern these activities where applicable:

1. Maintenance of existing hayfields and pastures
2. Standard farming activities at an existing establishment practicing agriculture, including but not limited to:
 - the construction of traditional walls and fences for the purpose of enclosing existing livestock areas or delineating existing fields, pastures, crops, and garden plots
 - construction or improvement of structures used for agriculture
 - bush-hogging existing regenerating fields for agricultural purposes
 - creation of utility lines and corridors directly associated with farm operations
 - creation of impervious surfaces for the purposes of equipment and product storage, and access to existing agricultural facilities, fields and pastures.
3. Forest management activities including commercial woodlot management completed in accordance with Maine Forest Practices Act; harvesting of wood products for personal use, but not permanent clearing as defined in section 111; and removal of dead, dying, and diseased trees. The removal of stumps, and grading conducted to limit natural regeneration of trees is not considered a forest management activity.
4. Structures constructed or placed on existing maintained lawns or impervious surfaces.

5. Permanent clearings within Wildlife Corridors less than 10,000 square feet in size.
6. The construction of one single family residence and accessory structures on a lot that is created by a single division of an existing parcel and has frontage on a public road. The total area of disturbance in the overlay district on the parcel must not exceed 1 acres.
7. The enlargement of existing agricultural clearings, or the creation of new agricultural clearings including pastures, provided the permanent clearings are utilized for agricultural purposes for a minimum of 30 years prior to any non-agricultural use. If such clearings are used for agriculture for fewer than 30 years , but are maintained as permanent clearings, the area maintained as a permanent clearing within the Overlay District shall be considered a disturbance for the purposes of 217.4. If the agricultural use is abandoned during the 30-year period and the clearing is allowed to naturally regenerate, the cleared area will not be considered a disturbance.

Rural Brunswick Smart Growth Overlay Districts



C. Standards for Development Activity

1. Activities in the overlay districts shall minimize disturbances to the extent feasible.
2. Activities in the overlay districts are subject to habitat mitigation, or eligible for bonus densities, based on the provisions in Section 217.4 Habitat Disturbance Analysis.
3. The Codes Enforcement Officer or Planning Board may reduce front, side, and rear setback requirements to minimize disturbances within the overlay district provided:
 - a. no other reasonable alternative exists, and
 - b. the setback reduction(s) will not cause unreasonable adverse impacts to the adjacent property.

D. Approval of Activities

1. Development review classifications and thresholds are defined under Section 402 of this ordinance.
2. Activities requiring a building permit, but not formal development review, will be reviewed jointly by the Codes Enforcement Officer and Planning Department for compliance with this section of the ordinance.
4. Activities requiring an Entrance permit must include a copy of the Entrance Permit Application with the building permit application. Clearing for these activities shall not occur until the driveway location and layout is approved as part of building permit review.
5. On-site project planning meetings with the Natural Resources Planner are encouraged in order to avoid and minimize disturbance of the overlay district.

217.4 Habitat Disturbance Analysis

In the case of subdivisions, disturbance shall include the area within residential lots other than those portions of the lot encumbered by deed restriction, conservation easement, or similar mechanism that limits future disturbances to those which meet the purposes of this ordinance.

A. Wildlife Habitat Block

Habitat mitigation, or density bonus eligibility, within the Wildlife Habitat Block District shall be provided in accordance with the following table. The amount of the disturbance is the cumulative amount on parcels that exist as of record on the date this section is adopted (“original parcel”). Division of the original parcel after the adoption of this ordinance does not change the measurement of cumulative disturbance on the original parcel.

The mitigation requirement is determined separately for each percentage category of disturbance.

Area of Overlay District within Original Parcel that is disturbed up to:	Area of Original Parcel covered by Overlay: 0 – 50%	Area of Original Parcel covered by Overlay: 51 -75%	Area of Original Parcel covered by Overlay: 76 – 100%
0%	no mitigation	15% density bonus	20% density bonus
15%	no mitigation	no mitigation	15% density bonus
25%	1:1 mitigation	no mitigation	10% density bonus
50%	2:1 mitigation	1:1 mitigation	1:1 mitigation
100%	3:1 mitigation	2:1 mitigation	2:1 mitigation

B. Wildlife Corridor

Subdivisions that avoid disturbance in the Wildlife Corridor, and place structures so as to avoid blocking wildlife travel ways, are eligible for a 15% density bonus.

217.5 Density Bonus – Permanent Habitat Protection Requirement

A density bonus will be granted only if the remaining land in the overlay district on the parcel is permanently protected through a conservation easement, deed restriction, or similar mechanism that limits future disturbance.

217.6 Habitat Impact Mitigation Requirements

Applicants are encouraged to discuss approaches to meeting this requirement with staff of the Department of Planning and Development prior to finalizing formal real estate agreements.

A. Acceptable Mitigation

1. Wildlife Habitat Block Requirement

- a. Land for mitigation shall be permanently protected through a conservation easement, deed restriction, or similar mechanism that limits future disturbance. Mitigation land should be within the same continuous block as the disturbed area; if the CEO or Planning Board determines that no land is available in the same district, then land in other wildlife overlay districts may be used to satisfy this requirement.
- b. The Town will maintain a list of landowners who are potentially willing sellers of acreage in fee, or development rights, of a portion of their property located within Wildlife Habitat Blocks.
- c. A conservation easement, deed restriction, or similar mechanism that limits future disturbance can be utilized on portions of newly created lots to meet the mitigation requirement.

2. Wildlife Corridor Requirement

- a. Land for mitigation within the Wildlife Corridor must be permanently protected through a conservation easement or similar mechanism that limits future disturbance. Mitigation land must be within the corridor as the disturbed area.
- b. If the requirements under 217.6.2.a cannot be met, then the applicant can satisfy mitigation requirements by restoring or enhancing woody vegetation cover in portions of the mapped corridor that have been previously disturbed by clearing or similar disturbance. Restoration and enhancement proposals must be reviewed and approved by the Director of Planning and Development, and the restored and/or enhanced acreage must be placed under permanent protection through a deed restriction, conservation easement or similar mechanism.
- c. The Town will maintain a list of landowners who are potentially willing sellers of acreage in fee, or development rights, of a portion of their property located within Wildlife Corridors.

(Section 217 was adopted in it's entirety on 3/6/06 R)

CHAPTER THREE: SPECIFIC DIMENSIONAL AND USE PROVISIONS

The purpose of this Chapter is to set forth more specific requirements than those found in Chapter 2. These requirements pertain to circumstances found throughout the Town in all zones. The standards set forth in this Chapter shall prevail over the requirements of any other chapter, with the exception that any conflicting standards found in an Overlay Zone shall prevail.

301 Density

All proposed development shall satisfy the density requirements for the zoning district in which it is located. The Planning Board may not waive density requirements, except where indicated in this Ordinance. Density is calculated on a net basis (except in the CP1 district) whereby the number of units is established by dividing the net site area as defined in Section 501.2 by the maximum density of the zoning district in which the proposed development is located. Density requirements apply only to developments or parts of developments involving dwelling units, as defined. (Amended 9/4/01 R)

302 Mixed Uses and Unit Ownership

302.1 Mixed Uses

Residential and non-residential uses may be combined in a building permit, Subdivision or Site Plan provided that all required Site Plan approvals or other applicable approvals are obtained and that the application complies with applicable density, impervious surface, use, and performance standards. The determination of density shall be in accordance with all applicable density standards for the zoning district in which the site is located.

302.2 Unit Ownership

Nothing in this Ordinance precludes the subdivision of buildings into units, either attached or detached, on a single lot provided that all applicable lot area, dimensional and density standards are met. An applicant seeking approval for any such proposal which involves development that requires development review must also submit to the Planning Board for approval all legal documents related to unit associations, ownership in common and appropriate by-laws, deeds and covenants to be recorded in the registry of deeds by the applicant.

303 Lots in Two Zoning Districts

- A. **Lots Greater Than Ten (10) Acres.** When a lot greater than ten (10) acres is divided by a district boundary, the zoning requirements for each district shall be applied as though the portions in each district were separate lots. The only exception is that there shall be no setback or frontage requirements along the zoning boundary line.
- B. **Lots Less Than Ten (10) Acres.** When a lot less than ten (10) acres is divided by a district boundary, the provisions of the zoning district in which the larger portion of the lot lies govern the use, density, lot area and dimensional requirements of the lot.
- C. **Lots in Overlay Zones.** When a lot is partially within an overlay zone, the provisions of the Overlay Zone shall apply only to the affected portion of the lot, regardless of the size of the lot.

Overlay Districts

Town of Jericho, Vermont

6. OVERLAY DISTRICTS

6.1. Scope and Authority

Overlay districts shall be considered as overlying other zoning districts. Any uses permitted in the portions of the districts so overlain shall be permitted subject to the provisions of the Overlay District. Where there is a conflict between the underlying zoning district and an overlay district, the more restrictive regulation shall apply.

6.2. Purpose

The purpose of the Overlay Districts is to identify the areas where protective measures will be employed to preserve the natural and aesthetic resources identified in the Jericho Comprehensive Plan.

6.3. Description

The overlay districts are the Wetlands Overlay District, the River Overlay District, the Wellhead Protection Area Overlay District, and the Natural Resources Overlay District.

6.4. Wetlands Overlay District

6.4.1. *Purpose:* The purpose of the Wetlands Overlay District is to preserve public health and safety, wildlife, and existing and future water supplies, and control pollution by maintaining the quality and level of the water table and surface waters.

6.4.2. *Delineation of District:* The Wetlands Overlay District shall consist of the following areas:

6.4.2.1. All land areas identified as “Class I and Class II Wetlands” on the most current “National Wetlands Inventory Map.” The actual boundaries of all wetlands shown on the “National Wetlands Inventory Map” shall be determined in the field in accordance with the delineation methodology provided for in the most recent Vermont Wetlands Rules. The applicant shall bear the sole responsibility and cost of the delineation process.

6.4.2.2. A buffer of fifty [50] feet surrounding all Class II wetlands referenced in 6.4.2.1 and a buffer of 100 feet surrounding all Class I wetlands referenced in 6.4.2.1.

6.4.3. *Permitted Uses:* The following uses are permitted in the Wetlands Overlay District:

6.4.3.1. Non-motorized passive recreation and wildlife management, provided that there is no construction of any new road, parking space, building, or structure, or draining, dredging or filling.

6.4.3.2. Proper operation and maintenance of existing dams, splash boards, man-made ponds and other water control, supply, and conservation devices in conformity with applicable state and federal regulations.

6.4.3.3. Agriculture not involving the use of structures and conducted in accordance with Vermont Department of Agriculture Acceptable Agricultural Practices and with the most recent Vermont Wetlands Rules.

6.4.3.4. Forestry not involving the use of structures and conducted in accordance with the Vermont Department of Forests and Parks Acceptable Management Practices and with the most recent Vermont Wetlands Rules.

6.4.4. *Conditional Uses:* Any of the following uses may be approved as a conditional use by the Development Review Board only upon finding that such use will not adversely affect existing and future water supplies, or the quality and level of the water table or surface waters.

6.4.4.1 Construction of dams, splashboards, and other water control, supply, and conservation devices in conformity with applicable state and federal regulations.

6.4.4.2 Construction and maintenance of water supplies, pump stations, and well fields.

6.4.4.3 Construction and maintenance of blinds, boardwalks, bridges, private single-dwelling water supplies and boat landings.

6.4.5. *General Standards for all Subdivisions and Permitted and Conditional Uses in the Wetlands Overlay District:* No development, dredging, ditching or manipulation of vegetation will be permitted within the Wetlands Overlay District unless in conformity with the Vermont Wetlands Rules.

6.4.5.1. No development, dredging, ditching or manipulation of vegetation will be permitted within the Wetlands Overlay District unless in conformity with the Vermont Wetlands Rules.

6.4.5.2. Construction of driveways, roads, and/or other crossings within the Wetlands Overlay District shall require Conditional Use Review by the Development Review Board. In addition to the Conditional Use Standards in Section 10.9, applicants shall meet the Standards found in Section 11.1.8.

6.4.6. *Relation to Planned Unit Development (PUD):* In Planned Unit Developments in conformity with Section 10.13 of these regulations, building areas shall not infringe upon the Wetland Overlay District

6.4.7. *Class III Wetlands:* While Class III wetlands that are neither contiguous nor connected to a Class I or II wetland are not governed by the Wetlands Overlay District, in the interest of preserving environmental integrity, it is recommended that no structure be located within twenty-five [25] feet of a Class III Wetland.

6.5. **River Overlay District**

6.5.1. *Purpose:* The purpose of the River Overlay District is to protect life and property by minimizing new development and inappropriate land uses in the floodplain and to protect valuable natural resources important for wildlife, recreation, and Jericho's rural atmosphere. Development should be very limited and new dwellings should not be constructed in this District.

The provisions of the River Overlay District afford greater protection to major watercourses and their floodplains and tributaries than is provided by NFIP (National Flood Insurance Program) regulations and Section 8 of these regulations. Where conflicts exist, the stricter provisions shall apply.

- 6.5.2. *Delineation of the District:* The River Overlay District shall consist of the following areas:
- 6.5.2.1. All 100-Year Floodplain Areas, which are defined as the following:
- 6.5.2.1.1. All areas in the Town of Jericho, Vermont identified as areas of special flood hazard in and on the most current flood insurance studies and maps published by the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), National Flood Insurance Program (NFIP), as provided by the Secretary of the Agency of Natural Resources pursuant to 10 VSA § 753, which are hereby adopted by reference and declared to be part of these regulations.
- 6.5.2.1.2. All areas that are either within 100 feet measured horizontally of the outside edge of the area of special flood hazard or less than five [5.0] feet above the base flood elevations have been established by FEMA, unless a survey prepared by a licensed surveyor demonstrates that the area is above the Base Flood Elevation. Such a survey shall be prepared at the applicant's expense and shall be subject to Independent Technical Review in accordance with Section 10.8.6 of these regulations.
- 6.5.2.2. All areas within the following buffers along mapped rivers and streams:
- 6.5.2.1.3. A buffer of thirty-five [35] feet from the top of bank of all streams identified as "first order" on the most recent Jericho Surface Water Map.
- 6.5.2.1.4. A buffer of fifty [50] feet from the top of bank of all streams identified as "second order" on the most recent Jericho Surface Water Map.
- 6.5.2.1.5. A buffer of 100 feet from the top of bank of streams identified as "third order or greater" on the most recent Jericho Surface Water Map.
- 6.5.2.3. Fluvial Hazard Erosion Areas mapped and defined by the Vermont Department of Environmental Conservation River Management Program
- 6.5.3. *Amendments to Floodplain Boundaries:* Flood insurance studies and maps are based on small-scale surveys that may not capture all topographical features and inaccurately depict the floodplain boundary in some areas. The River Overlay District may be amended to more accurately reflect the actual floodplain boundary subject to conditional use review and the following:
- 6.5.3.1. Only land which is naturally above the Base Flood Elevation and outside of prescribed stream buffers may be removed from the

River Overlay District. The procedures described below shall not be used to remove areas raised above the Base Flood Elevation through the use of fill or grading from the River Overlay District. The procedures described below shall not be used to remove areas within the buffers specified in 6.5.2.2 or the Fluvial Hazard Erosion areas specified in 6.5.2.3 from the River Overlay District.

6.5.3.2. The River Overlay District Boundary shall be amended for the entire parcel in question. In removing a portion of a parcel naturally above the Base Flood Elevation from the River Overlay District, all portions of the parcel naturally below the Base Flood Elevation shall be added to the River Overlay District.

6.5.3.3. Prior to applying to the Development Review Board for an amendment to the River Overlay District Boundary, the applicant shall obtain a Letter of Map Amendment (LOMA) from the Federal Emergency Management Agency (FEMA), copies of which shall be submitted with the application.

6.5.3.4. A survey prepared by a licensed surveyor, showing the actual floodplain boundary for the entire parcel, based on Base Flood Elevations established by FEMA, shall be submitted with the application. The applicant shall bear the sole responsibility and cost of the survey.

All areas of the parcel located below the Base Flood Elevation shall be identified on the survey, including those not identified as areas of special flood hazard on the flood insurance maps and studies. This survey shall be subject to Independent Technical Review in accordance with Section 10.8.6 of these regulations.

6.5.3.5. Upon determination by the Development Review Board that a parcel or portion of a parcel is naturally above the Base Flood Elevation, that parcel or portion of a parcel shall not be considered within the River Overlay District. Upon such a determination, any other portion of the parcel located below the Base Flood Elevation which is not identified as an area of special flood hazard by the flood insurance maps and studies shall be considered to be within the River Overlay District.

6.5.3.6. Letter of Map Revision – Fill: For the purpose of obtaining lower flood insurance premiums only, FEMA may grant Letter of Map Revision-Fill (LOMR-F) to structures raised above the 100-year flood elevation through the use of fill. A structure or property which has obtained a LOMR-F or similar determination from FEMA shall NOT be considered to have been removed from the River Overlay District.

6.5.4. *Reduction of Stream Buffer Width:* Subject to Conditional Use Review, the Development Review Board may authorize a reduction in the stream buffer required under Section 6.5.2.2 down to an absolute minimum of ten [10] feet upon presentation of an impact study that provides sufficient documentation

and justification that even with the reduction, the same or greater degree of water quality protection, wildlife habitat protection, and stream bank stability would be afforded as would be with the full width buffer. In granting such a reduction, the Development Review Board may require additional erosion control or runoff control measures as deemed necessary to protect water quality and bank stability and/or additional measures to protect wildlife, such as habitat restoration or improvement. An impact study shall meet the following requirements:

6.5.4.1. The Impact Study shall include detailed information regarding runoff and pollutant loading bank stability, and erosion and flood control, including but not limited to the following:

- (a) This portion of the Impact Study shall be performed by a registered professional engineer.
- (b) Description of the proposed project including location and extent of impervious surfaces, on-site processes or storage of material; the anticipated use of the land and buildings; description of the site including topographic, hydrologic, and vegetative features.
- (c) Characteristics of natural runoff on the site and projected runoff with the proposed project, including its rate and chemical characteristics deemed necessary to make an adequate assessment of water quality.
- (d) Measures proposed to be employed to reduce the rate of runoff and pollutant loading of runoff from the project area, both during construction and after.
- (e) Proposed runoff control and reservoir protection measures for the site. These measures shall be designed to ensure that the rate of surface water runoff from the site does not exceed pre-development conditions and that the quality of such runoff is not less than pre-development conditions.
- (f) The extent to which the reduced buffer will provide for stream bank stability and flood and erosion control. In no case shall a reduced buffer provide for less stream bank stability, flood control and/or erosion control than would be provided by the prescribed buffer.

6.5.4.2. The Impact Study shall include detailed information regarding impacts on wildlife habitat, including but not limited to:

- (a) Analysis of the project's impacts on habitat for fish and other aquatic animals, including impacts on the availability of woody debris and food supply and effects on water temperature in other portions of the water way.
- (b) Analysis of the project's impacts on habitat for amphibious and terrestrial organisms, including the reduced buffer's functional capacity as a wildlife corridor.

- (c) Description of measures, both on and off site, to improve or maintain the quality of wildlife habitat. The project shall be designed to ensure that the reduced buffer is of equal or greater value than the buffer prescribed by these regulations.
- 6.5.4.3. The Impact Study shall be subject to Independent Technical Review in accordance with Section 10.8.6 of these regulations.
- 6.5.5. *Permitted Uses:* The following uses are permitted in the River Overlay District:
 - 6.5.5.1. Agriculture
 - 6.5.5.2. Silviculture/Forestry
 - 6.5.5.3. Farmers markets
 - 6.5.5.4. Recreation, passive
 - 6.5.5.5. Wildlife Management
- 6.5.6. *Conditional Uses:* The following uses may be permitted in the River Overlay District as Conditional Uses by the Development Review Board in conformity with Section 10.8 of these regulations:
 - 6.5.6.1. Accessory structure/use (only in stream buffer areas defined by Section 6.5.2.2)
 - 6.5.6.2. Recreation, general outdoor
- 6.5.7. *Relation to Flood Hazard Area Regulations:* All applications for land development in the areas specified in Section 6.5.2.1 shall meet the requirements of Section 8 of these regulations in addition to the requirements of the River Overlay District.
- 6.5.8. *General Standards for all Subdivisions and Permitted and Conditional Uses in the River Overlay District.*
 - 6.5.8.1. All lands within the stream buffer specified in Section 6.5.2.2 shall be left in an undisturbed, naturally vegetated condition. No development, excavation, landfill, or grading shall occur within the buffer area, and vegetation shall be left in an undisturbed state, with the exception of limited clearing and site development associated with the following encroachments:
 - 6.5.8.1.1. Agricultural, not involving the use of structures and conducted in accordance with Vermont Department of Agriculture Acceptable Agricultural Practices;
 - 6.5.8.1.2. Forestry, including logging roads, consistent with a written Forest Management Plan and conducted in accordance with the Vermont Department of Forests and Parks Acceptable Management Practices;

- 6.5.8.1.3. The removal of dead, heavily damaged, or diseased trees, or trees that pose an immediate threat to human safety;
- 6.5.8.1.4. Maintenance of lawns, pasturelands, meadows or fields in existence prior to the adoption of these regulations;
- 6.5.8.1.5. Supplemental planting and landscaping with appropriate species to achieve the objective of an undisturbed, naturally vegetated stream buffer;
- 6.5.8.1.6. The control of non-native species of nuisance plants including but not limited to water chestnut, purple loosestrife, reed grass (phragmites), and Japanese knotweed, where such control is by:
 - (i) hand pulling, or
 - (ii) in accordance with a written plan approved by the Vermont Agency of Natural Resources and under any applicable law;
- 6.5.8.1.7. Bank stabilization or restoration projects, designed and constructed in accordance with applicable state and federal regulations;
- 6.5.8.1.8. Road, rail, driveway and utility crossings;
- 6.5.8.1.9. Pedestrian and recreation paths;
- 6.5.8.1.10. River access such as piers, docks, and boat ramps;
- 6.5.8.1.11. Low Impact Development Stormwater treatment practices meeting the design and maintenance standards of the latest version of the Vermont Stormwater Management Manual; and
- 6.5.8.1.12. Hydroelectric power generation.
- 6.5.8.2. The creation of new lawns within the stream buffer area is not permitted. Maintenance of lawns in existence prior to the adoption of these regulations shall be permitted. However, property owners are encouraged to return mowed areas to a naturally vegetated state and/or to restore and enhance these areas with landscaping and supplemental planting of natural vegetation.
- 6.5.8.3. Areas that are not vegetated or that are disturbed during construction shall be seeded with a naturalized mix of grasses rather than standard lawn grasses.
- 6.5.8.4. For developments subject to DRB review, the Development Review Board may require the applicant to develop and implement management plans for areas subject to the River Overlay District, if it is determined that such measures are necessary based on the conditions of the site and the nature of

the proposed use. Such plans shall include measures to protect water quality, bank stability, and wildlife habitat.

- 6.5.8.5. Construction of driveways, roads, and/or other crossings within the River Overlay District shall require Conditional Use Review by the Development Review Board. In addition to the Conditional Use Standards in Section 10.9, applicants shall meet the Standards found in Section 11.1.8.

6.6. Wellhead Protection Area Overlay District

- 6.6.1. *Purpose:* The purpose of the Wellhead Protection Area [WHPA] District is:

- to promote the health, safety, and general welfare and to conserve the natural resources of the community;
- to protect the ground water and ground water recharge areas of the town from adverse development or land use practices; and
- to preserve and protect present and potential sources of water supply for the public health and safety.

- 6.6.2. *Delineation of Districts:* The Wellhead Protection Area (WHPA) Overlay District shall consist of the following three areas:

WHPA-1: A circle of radius 200 feet surrounding each of the water supply wells serving the Jericho Village Water District, the Foothills water supply, the Jericho East water supply, and the Underhill-Jericho Water District, the Jericho Heights water supply, and any other public water supply on the most recent “*Water Source Protection Areas*” map, prepared by the Vermont Agency of Natural Resources Water Supply Division. The above map is herein incorporated by reference and made a part of this ordinance.

WHPA-2: Wellhead protection areas in active use identified on the most recent “*Water Source Protection Areas*” map prepared by the Vermont Agency of Natural Resources Water Supply Division that are delineated as Zone 2 on the water system’s most recent Source Protection Plan.

WHPA-3: Wellhead protection areas in active use identified on the most recent “*Water Source Protection Areas*” map prepared by the Vermont Agency of Natural Resources Water Supply Division that are delineated as Zone 3 on the water system’s most recent Source Protection Plan.

- 6.6.3. *Permitted Uses:* The following uses are permitted in the Wellhead Protection Area Overlay District

WHPA-1:

- (a) Wildlife management;
- (b) Passive recreation;

- (c) Proper operation and maintenance of existing dams, splash boards, and other water control, supply and conservation devices;
- (d) Maintenance and repair of any existing structure;
- (e) Agriculture and forestry provided that fertilizers, herbicides, pesticides and other leachable materials are neither applied nor stored outdoors.

WHPA-2:

- (a) All permitted uses in the WHPA-1 above
- (b) Agriculture and forestry
- (c) All permitted uses within the underlying district that do not involve the collection, handling, manufacture use, storage, transfer or disposal of hazardous materials or hazardous wastes.

WHPA-3:

- (a) All permitted uses in the WHPA-1 and WHPA-2 above
- (b) All permitted uses within the underlying district

6.6.4. *Conditional Uses:* The following uses may be permitted in the Wellhead Protection Area Overlay District as conditional uses by the Development Review Board in accordance with Section 10.9 of these regulations:

6.6.4.1. **WHPA-1:** none

6.6.4.2. **WHPA-2:**

- (a) All permitted uses within the underlying district involving the collection, handling, manufacture use, storage, transfer or disposal of hazardous materials or hazardous wastes;
- (b) All conditional uses within the underlying district.

6.6.4.3. **WHPA-3:** all conditional uses within the underlying district.

6.6.5. *General Standards for all Subdivisions and Permitted and Conditional Uses in the Wellhead Protection Area Overlay District:*

6.6.5.1. Lot coverage shall not exceed fifty percent [50%] unless the applicant utilizes Low Impact Development practices and techniques to manage stormwater. Such practices shall allow for the on-site reabsorption and treatment of stormwater, such that it will not contaminate or inhibit the recharge of groundwater.

6.6.5.2. As a condition of approval, the DRB may require the applicant to decommission all abandoned wells, including those less than twenty [20] feet deep, located on the property to be developed. The DRB may also require the applicant, at his/her expense, to decommission abandoned wells, including those less than twenty [20] feet deep, located within the Wellhead Protection Area Overlay District on neighboring properties, provided the landowner's permission can be obtained. Abandoned wells shall be decommissioned by a Vermont licensed well driller in

accordance with Chapter 21, Parts 11 and 12 of the Vermont Water Supply Rule.

- 6.6.5.3. All underground storage tanks and pipes carrying hazardous materials, including category four underground storage tanks as defined by the Vermont Department of Environmental Conservation Waste Management Division, shall have a secondary containment system and an inspectable sump, and shall be equipped with interstitial monitoring.
- 6.6.6. *Conditional Use Standards:* In addition to the Conditional Use Standards in Section 10.9, applications for conditional uses in the Wellhead Protection Area Overlay District shall meet the following standards:
 - 6.6.6.1. Any facility involving the collection, handling, manufacture use, storage, transfer or disposal of hazardous materials or hazardous wastes shall have a secondary containment system which is easily inspected and whose purpose is to intercept any leak or release from the primary containment system.
 - 6.6.6.2. Storage of petroleum products exceeding 1,100 gallons at one locality in one tank or a series of tanks shall be in elevated tanks. Such tanks shall have a secondary containment system and shall be equipped with interstitial monitoring.
 - 6.6.6.3. Any use involving the collection, handling, manufacture use, storage, transfer or disposal of hazardous materials or hazardous wastes shall prepare an acceptable contingency plan for preventing hazardous materials and/or hazardous wastes from contaminating the shallow/surficial aquifer should floods, fire, or other natural catastrophes, equipment failure, or releases occur:
 - 6.6.6.3.1. **For flood control**, all underground facilities shall include but not be limited to a monitoring system and secondary standpipe above the Base Flood Elevation. For above ground facilities an impervious dike above Base Flood Elevation capable of containing 100 percent [100%] of the largest volume of storage will be provided with an overflow recovery catchment area (sump).
 - 6.6.6.3.2. **For fire control**, plans shall include but not be limited to a safe firefighting procedure, a fire retarding system, effective containment of any liquid runoff, and provide for dealing safely with any other health and technical hazards that may be encountered by disaster control personnel in combating fire. Hazards to be considered are pipes, liquids, chemicals, or open flames in the immediate vicinity.
 - 6.6.6.3.3. **For equipment failures**, plans shall include but not be limited to:

- (i) Below ground level – removal or replacement of leaking parts, a leak detection system with monitoring, and an overfill protection system;
- (ii) Above ground level – liquid and leaching monitoring of primary containment systems, the replacement and/or repair and cleanup of impervious surfaces.

6.6.6.4. The owner and/or operator shall report all incidents involving liquid or chemical material to the Zoning Administrator within seven [7] days of the incident.

6.7. Natural Resources Overlay District

6.7.1. *Purpose:* The purpose of the Natural Resources Overlay District is:

- to preserve wildlife habitat such as deeryards;
- to conserve and protect identified natural areas and natural communities such as significant habitat for flora and fauna; and
- to preserve identified scenic resources such as ridgelines.

6.7.2. *Delineation of District:* The Jericho Natural Resources Overlay District shall consist of the following areas: wildlife habitat, natural areas, natural communities, scenic resources, and natural resource lands.

6.7.2.1. **Wildlife habitat** shall consist of areas which are located in or within 100 feet of any “winter deer range” as depicted on the current version of the Vermont Department of Fish and Wildlife map titled “*Significant Habitat Map*”, or have been investigated and confirmed by the Vermont Department of Fish and Wildlife to be deer critical habitat.

6.7.2.2. **Natural areas and natural communities** shall consist of areas designated by the Vermont Natural Heritage Program and indicated on the map titled “*Biological Natural Areas of Chittenden County*” dated January, 1991 which are hereby incorporated by reference and made a part of this section.

6.7.2.3. **Scenic areas** shall consist of the upper 100 feet of elevation of all peaks over 1000 feet in elevation.

6.7.3. *Table of Uses:* The following Table lists permitted and conditional uses in the Natural Resources Overlay District. All uses not enumerated in this table are prohibited.

Use	Natural Areas, Communities	Wildlife Habitat	Scenic Areas
Wildlife management	P	P	P
Passive recreation	P	P	P
Selective timber cutting (for personal use or woodland management)	P	P	P
Agriculture, not involving the use of structures and	P	P	P

conducted in accordance with Vermont Department of Agriculture Acceptable Agricultural Practices			
Forestry, not involving the use of structures and conducted in accordance with the Vermont Department of Forests and Parks Acceptable Management Practices	P	P	P
Dwellings		PUD	C
Accessory structures		C	C

1) P = permitted use; C = conditional use; PUD = use approved only in association with a PUD, and only as prescribed in Section 6.7.5.1, "Special exception for Planned Unit Developments" of these regulations.

6.7.4. *Conditional Use Standards:* In addition to the Conditional Use Standards in Section 10.9, applications for conditional uses in the Natural Resources Overlay District shall meet the following standards:

6.7.4.1. All conditional uses in scenic areas shall be located to minimize the visual impact of siting and clearing, and

6.7.4.2. All conditional uses shall be sited to minimize degradation of the natural resource and erosion of surrounding lands.

6.7.5. *Relation to Planned Unit Development (PUD):* In Planned Unit Developments, in conformity with Section 10.10 of these regulations building areas shall not infringe upon the natural resources overlay district, except as follows:

Special Exception for Planned Unit Developments:

Up to twenty percent [20%] of land areas designated "wildlife habitat" pursuant to 6.7.2.1 may be developed as part of a Planned Unit Development when in the opinion of the Development Review Board

6.7.5.1.1. there is no other practical possibility for the configuration of building lots outside of the overlay area, and

6.7.5.1.2. the proposed location and configuration of building lots minimizes the impact of the development on the overlay area.

Overlay Districts

**Model Language
North Carolina**

Model Natural Resources Conservation Ordinance

Published by the North Carolina Wildlife Resources Commission and the Duke University, Nicholas Institute for Environmental Policy Solutions

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Explanatory Note: Throughout this model ordinance, comments from the drafters of this ordinance are placed in boxes such as this. These comments should be removed before the ordinance is adopted; they are not part of the ordinance itself.

Optional provisions are provided throughout this document and are intended to address the diverse needs of local governments. Optional provisions are discussed in the commentary and delineated by brackets like these {XXX}.

The **bold underlined text** serves as a prompt for local governments to customize the text or insert local government names.

Defined terms are shown in italics.

This ordinance was developed to address degradation of natural resources, including wildlife habitats, water and air, from the direct and cumulative impacts of development. The intent is to conserve only areas with the most sensitive natural resources and to maintain the healthy functioning of significant natural resources in individual local governments' jurisdictions while accommodating desired growth and development. Enacting local conservation measures will help developers and landowners to meet state and federal environmental permit requirements reducing unexpected delays and design problems.

This model ordinance is not designed as a stand-alone ordinance but offers a variety of optional language and measures to achieve natural resource conservation. The conservation measures provided are based on recommendations from a comprehensive review of the scientific literature. If a local government chooses to incorporate the provisions of this ordinance into a comprehensive land use regulation ordinance, these provisions should be reviewed, amended, or omitted as may be necessary to ensure consistency, avoid redundancy, retain any provisions specifically related to project review and to ensure the ordinance is adopted, implemented, and enforced pursuant to appropriate local government authority.

This model ordinance can be edited and adapted to be implemented as an option that developers can choose in exchange for a density bonus or other type of incentive.

As another alternative, we recommend that conservation development be permitted within the conservation district and that conventional development be a conditional use within the district.

For more information on many ways to implement and incentivize conservation development please see the NC Wildlife Resources Commission Green Growth Toolbox at: www.ncwildlife.org/greengrowth.

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Section I. General Provisions

A. Title

This ordinance shall be officially known as the Natural Resources Overlay District for the [Insert local government name here]. It is referred to herein as “the ordinance.”

B. Authority

This ordinance is adopted pursuant to N.C. Const. art XIV, sec 5 and [Insert appropriate county, e.g., N.C. Gen. Stat § 153A-121 and § 153A-340 (2011) or municipal authority, N.C. Gen. Stat. §160A-174 and §160A-381 (2011) here]

Explanatory Note: Some jurisdictions may wish to incorporate this ordinance into a land use ordinance or unified development ordinance and may want to add a reference to statutory authority for planning and regulation of development (Chapter 153A, Article 18 (Parts 1, 2, and 3) and G.S. 160A, Art. 19). Jurisdictions should evaluate other ordinances to ensure consistent application of land use regulations such as open space, storm water regulations, tree ordinances, and others. In addition, when adopting this ordinance as part of land use regulations, local governments should follow the standards for adopting or amending ordinances found in G.S. 153A-323 or 160A-364 and all other applicable requirements

C. Effective Date

This ordinance takes effect on [Insert date here]

D. Findings of Fact

1. Natural resources such as natural water supply systems, forests, and plant and wildlife habitat provide valuable cultural, educational, and recreational opportunities and support local industries and public health and welfare.
2. Areas that contain a diversity of plant and animal species can be a natural resource of local, state, national, and global significance.
3. Plants and animals play an important role in maintaining healthy ecosystems through ecological interactions such as predation, pollination, and seed dispersal. Maintaining healthy natural resources mitigates air pollution, improves water quality, reduces drought and flooding, and sustains local timber, recreation and associated jobs and local revenue.
4. The quantity and quality of drinking water is enhanced by healthy ecosystems through mechanisms such as water absorption and filtration. These services can be degraded when *impervious surfaces* are placed in sensitive areas.

5. Maintaining healthy and diverse natural resources is important for a robust farming, forestry, and horticulture economy. These industries rely on pollinators, predators of pests, healthy soil, and other natural resources. These industries can be compromised when incompatible land uses surround them.
6. Certain types of land development can negatively impact ecosystems, natural areas and wildlife. Properly planned development can maintain these natural resource assets by avoiding the *fragmentation* of key natural areas and the associated reduction of ecosystem function and services.

Explanatory Note: The Findings of Fact are designed to help local governments identify benefits of natural resources conservation specific to their community. This wording is intended to be a clear and simple description of purpose and value of habitat conservation. The local government adopting this ordinance may want to supplement the Findings of Fact, depending on specific local needs, including local government's finding that outdoor recreation, preservation of green space is important to the community. The Findings of Fact are designed to complement the subsequent Purposes and Goals section.

E. Purposes and Goals

1. The purpose of the Natural Resources Overlay District is to maintain the quality of life in [insert local government name here] and to protect the health, safety, welfare and general well-being of the citizens of [insert local government name here] by conserving and connecting the highest priority waterways, forests, and habitat for terrestrial and aquatic native plants and animals in [insert local government name here]'s jurisdiction while accommodating development and other land uses.
2. The Natural Resources Overlay District is designed to preserve and protect ecosystems while balancing the need for planned growth. This shall be accomplished by minimizing *fragmentation* or separation of *significant natural resource areas*, protecting upland habitats in addition to adjacent waterways and water sources, maintaining plant and animal habitat diversity and specifically protecting unique environmental features identified as integral parts of the designated landscape.
3. This ordinance shall establish standards and procedures for the use and development of land. The standards and procedures are designed to protect, conserve, enhance, restore, and maintain *significant natural resource areas* and the ecological connections between them.
4. The Natural Resources Overlay District conserves *significant natural resource areas* identified by [insert local government name here].

5. It is intended that the implementation of this ordinance accomplish the following goals:

Explanatory Note: This subsection is designed to help communities identify relevant goals. This list is illustrative only and some objectives may be redundant or may not capture the full needs of the local government. The local government should evaluate all benefits, including secondary benefits, of adopting a natural resources conservation ordinance.

- a. Create an aesthetically pleasing and functional living environment by conserving remaining healthy terrestrial and aquatic habitats within our jurisdiction.
- b. Maximize the retention of existing [**describe region's significant natural resources here, for example streams, lakes, longleaf pine forest, bottomland or floodplain forest**] which constitute *significant natural resource areas*, which is identified as a valuable natural resource of our community.
- c. Connect *significant natural resource areas* with corridors of land in a natural state to maximize the migration of wildlife and plant species among habitat areas.
- d. Maintain balanced outdoor recreation opportunities such as hunting, fishing, bird watching, and other outdoor pursuits.
- e. Create opportunities for greenways throughout the community for trails, connecting habitat, protecting streams, sustaining wildlife, and providing recreation activities for residents.
- f. Ensure that land uses and development are planned and designed to be harmonious with *significant natural resources areas* and to reduce conflicts with working lands, wildlife conservation, and habitat management activities.
- g. Protect remaining large contiguous *significant natural resource areas* from activities that would alter their ecological integrity, balance, or character.
- h. Maintain the diversity of plant and wildlife species and habitat found in the community and help to keep rare species from requiring Endangered Species Act protections in the future.

- i. Promote multiple community benefits e.g. nutrient pollution reduction, water supply protection, flood protection, steep slope protection, priority plant and animal habitat protection, air quality, soil conservation, minimizing noise and light pollution, and others.
- j. Protect and enhance scenic resources including landscapes, ridgelines, meadows, and geologic features that have special scenic character or a historic or aesthetic interest or value.

F. Relationship to Other Laws, Regulations, and Ordinances.

1. The regulations contained in this law are not intended to be substituted for other general zoning district provisions, but should be considered as additional requirements to be met by applicants, prior to project approval. The purpose of the Natural Resource Overlay District is to provide the [insert local government name here] with an additional level of review and regulation to specify how land use and development, permitted by the [insert local government name here]'s primary zoning districts, occurs in *significant natural resource areas*.
2. This ordinance is not intended to modify or repeal any other ordinance, rule, regulation or other provision of law. The requirements of this ordinance are in addition to the requirements of any other ordinance, rule, regulation, or other provision of law. Where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human or environmental health, safety, and welfare shall control.¹

{Alternate language: Nothing in this ordinance is intended to alter or pre-empt any other applicable regulations or the federal, state, or local government as they may apply within or outside the natural resources overlay district. Specifically, all federal or state regulations regarding protection of waterways, water bodies, and wildlife or plant species habitat shall apply throughout the jurisdiction notwithstanding this ordinance. Nothing in this ordinance is intended to usurp, limit or to be inconsistent with the authority of local, state or federal regulatory agencies. Further, the regulations set forth in this ordinance shall be in addition to the regulations set forth in the [insert local government's name here] code regarding landscaping, tree removal, site clearing and wetland protections and setbacks.}

¹

From Jordan Model Stormwater Ordinance for New Development

G. Severability

If the provisions of any section, subsection, paragraph, subdivision, or clause of this ordinance are adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision, or clause of this ordinance.²

H. Interpretation³

1. Meaning and Intent

All provisions, terms, phrases, and expressions contained in this ordinance shall be construed according to the general and specific purposes set forth in this ordinance. If a different or more specific meaning is given for a term defined elsewhere in **[insert name of local government's code of ordinances]**, the meaning and application of the term in this ordinance shall control for purposes of application of this ordinance. Any term not herein defined elsewhere in the **[insert local government name here]** Code, or if not defined elsewhere in the Code, then as defined in Webster's New International Dictionary most recent addition, unless the result does not effectuate the intent of the governing bodies, leads to absurd or illogical results, or is inconsistent with the surrounding textual context.

2. Text Controls in Event of Conflict

In the event of a conflict or inconsistency between the text of this ordinance and any heading, caption, figure, illustration, table, or map, the text shall control.

3. References to Statutes, Regulations, and Documents

Whenever reference is made to a resolution, ordinance, statute, regulation, manual, or document, it shall be construed as a reference to the most recent edition of such that has been finalized and published with due provision for notice and comment, unless otherwise specifically stated.

4. Word Usage

a. Mandatory and Discretionary Terms

³ Adapted from the Jordan Lake Model Stormwater Ordinance for New Development

The words “shall,” “must,” and “will” are mandatory in nature, establishing an obligation or duty to comply with the particular provision. The words “may” or “should” are permissive in nature.

b. Conjunctions

Unless the context clearly indicates the contrary, conjunctions shall be interpreted as follows: The word “and” indicates that all connected items, conditions, provisions and events apply. The word “or” indicates that one or more of the connected items, conditions, provisions or events apply.

c. Tense, Plural, and Gender

Words used in the present tense include the future tense. Words used in the singular number include the plural number and plural number includes the singular number, unless the context of the particular usage clearly indicates otherwise. Words used in the masculine gender include the female gender and vice versa.

Section II. Natural Resources Conservation District Established and Official Map

Explanatory Note: Extensive biological survey information and natural resource maps already exist for the state and can be used by local governments in delineating their Natural Resources Conservation Overlay District. The drafters encourage local governments creating an overlay district to utilize the Biodiversity and Wildlife Habitat Assessment map created by the NC Department of Environment and Natural Resources as the basis for delineating parcel boundaries for their overlay district with the exception of certain habitat types. We recommend that local governments also use additional wildlife, habitat and other natural resources conservation data available to communities in North Carolina. This conservation data is explained and compiled in one place by the NC Wildlife Resources Commission in the Green Growth Toolbox and available at www.ncwildlife.org/greengrowth. Utilizing existing data reduces the burden on local governments to collect natural resources data on their own. If a local government chooses to develop and use their own data, the model ordinance must be revised accordingly. The NC Wildlife Resources Commission or another natural resources agency may be consulted to provide technical information about the conservation data.

Please note: North Carolina statutes establish special mandates that must be observed in order for the map and ordinance to be adopted, amended or repealed. This model ordinance does not set out those procedures.

- A. The Natural Resources Conservation District is hereby established as a separate district. The boundaries of the Natural Resources Conservation District are shown on **[insert local government's name here]**'s Natural Resources Conservation Map, dated **[insert data]**, on file with **[insert appropriate office here, e.g., office of city clerk]**, which map is herein adopted by reference. This map shall be known and cited as the "Official Natural Resources Conservation Map." The Official Natural Resources Conservation Map and all explanatory information contained therein accompany and are hereby made part of this ordinance. Upon adoption of this ordinance, the parcels included in the Natural Resources Conservation District shall be shown on the official zoning map.
- B. The general boundaries of the Natural Resources Conservation District are defined by the best available conservation data delineating *significant natural resource areas* identified by **[insert local government name here]**, with rights-of-way and property lines used to determine inclusion or exclusion in the Natural Resources Conservation District.
- C. In the event of a dispute, the applicability of this ordinance to a particular area of land shall be determined by reference to the North Carolina General Statutes, the North Carolina Administrative Code, and local zoning and jurisdictional boundary ordinances.

SECTION III. APPLICABILITY

A. Applicability

The provisions of this ordinance shall apply to all *development* that requires a *development approval* within the Natural Resources Conservation District, unless the *development* is expressly exempted by law, or as provided herein. Before the [insert name of local government here] issues a *development approval*, the *development* on the parcel shall have an approved *natural resources conservation plan* as required pursuant to this ordinance.

Whenever the city annexes any parcel or property, the annexed area shall undergo review for a determination of existence of *significant natural resource area*.

Explanatory Note: Most activities that require formal project review or even just a building permit are obvious choices as applicable activities given some degree of review of these activities is expected at the local level. Activities that could affect the functional value of the resource being considered by the ordinance, but that do not necessarily trigger review under current mechanisms need to be carefully considered.

Local governments should consider how to coordinate natural resources conservation plan review and approval with other land use project reviews. For example, local governments that administer their own sedimentation and erosion control program should ensure that natural resources conservation plan approval occurs prior to grading or sedimentation and erosion control plan approval. In some cases, a natural resources conservation plan may require revision when the preliminary subdivision plan is finalized. Local governments may choose to require a preliminary plan to be approved along with the preliminary subdivision plan and require a final plan to be approved prior to final approval of the subdivision plan.

Alternatively, this model ordinance can be edited and adapted to be implemented as an option that developers can choose in exchange for a density bonus or other type of incentive.

B. Exempt Activities

Explanatory Note: This model ordinance does not identify specific exempt activities because local governments have different needs, capacity for review and enforcement, and authority. The drafters encourage local governments to evaluate specific types of activities to be included and recommend the following.

1. Activities that do not pose a significant adverse impact on the environmental value of the *significant natural resource area*, e.g., maintenance of existing structures or open spaces or *de minimus* building activities. Local governments may choose to exempt single family residences for lots one acre or less existing as of the date of the ordinances. Suggested language:

{Single family and duplex residential and recreational development that cumulatively disturbs less than one acre and is not part of a larger common plan of development or sale is exempt from the provisions of this ordinance.

Commercial, industrial, institutional, multifamily residential or local government development that cumulatively disturbs less than one-half acre and is not part of a larger common plan of development or sale is exempt from this ordinance.

Redevelopment that cumulatively disturbs less than one acre and is not part of a larger common plan of development or sale is exempt from the provisions of this ordinance.

Development and redevelopment that disturbs less than the above thresholds are not exempt if such activities are part of a larger common plan of development or sale and the larger common plan exceeds the relevant threshold, even though multiple, separate, or distinct activities take place at different times on different schedules} (adopted from the Jordan Model Stormwater Ordinance for New Development)

2. Agriculture, forestry, silviculture, and any other activity the local government determines is consistent with conservation of *significant natural resource area* or activities for which the local government does not have the authority to regulate.

3. Development activities that are vested pursuant to statutory or common law.

Alternatively, this model ordinance can be edited and adapted to be implemented as an option that developers can choose in exchange for a density bonus or other type of incentive.

SECTION IV. STANDARDS

Explanatory Note: This section sets out the land use guidelines designed to conserve *significant natural resource areas*. The overall structure requires developers and land owners that are not exempt to conserve *significant natural resource areas* (up to 50% of the tract – See B.2. management plan) and implement performance standards to offset impacts to the *significant natural resource areas*. The standards below communicate the best current scientific knowledge about conservation of natural resources alongside development and can be changed to meet the needs of your jurisdiction.

A. General Standards

All activities to which this ordinance applies shall comply with the standards in this ordinance. The approval of the *natural resource conservation plan* shall require an enforceable restriction on property usage that runs with the land to ensure that future activities maintain the site consistent with the approved project plans.

B. Natural Resources Conservation Plan

Natural resources conservation plans shall be developed by *persons* proposing to impact a *significant natural resource area* within the Natural Resources Conservation District.

Explanatory Note: The NC Wildlife Resources Commission or another natural resources agency may be consulted to evaluate natural resources conservation plans. It is advisable to identify and inquire with agency biologists at the earliest opportunity ahead of submittal of the natural resources conservation plan to schedule technical guidance, so that reviews can be completed in a timely manner.

No *person* shall commence *development* that is subject to this ordinance without an approved *natural resources conservation plan*. The *person* proposing to conduct *development activity* shall prepare a *natural resources conservation plan* that consists of the following:

1. Site information, if not otherwise required for the approval of the *development*, including the following:
 - a. A location plan and boundary line survey of the tract.
 - b. The location of the Natural Resources Conservation District boundaries.
 - c. A habitat survey shall confirm the presence of *significant natural resources*. The habitat survey should include documentation of wetlands, rock outcrops, intermittent and perennial streams, caves and mines, longleaf pine forest, upland hardwoods and upland pine forest and other *significant natural resource*

areas. The habitat survey shall be conducted by a *qualified biologist* with demonstrated experience in wildlife habitat identification. The boundaries of all of the *significant natural resources* shall be identified and labeled on the sketch plan and all site plans. Photographs depicting each of the significant natural resources on the site shall be provided.

- d. The site plan must identify and provide pictures of existing disturbed areas, existing buildings, structures, utility lines, sewers, water and storm drains, all constructed stormwater management systems, and existing impervious surfaces.
 - e. Detailed sketch plan of proposed development outlining the total disturbance area, including proposed building footprints, site property improvements, utilities, and landscaping. The sketch plan is intended to be an approximation of the final site plan and serves the purpose of providing an opportunity for changes to be proposed ahead of significant investment by the applicant. The sketch plan should be reviewed by the planning department ahead of formal submission of the detailed final site plan.
 - f. Final site plan of proposed development outlining the total disturbance area, including proposed building footprints, site property improvements, utilities, and landscaping.
2. Management plan for *significant natural resources* preserved on-site. The management plan shall identify habitat management activities that will act to maintain the *significant natural resources*. The management plan shall be developed by a *qualified biologist* and shall contain specific habitat management implementation activities, schedules, and assignment of responsibility. The management plan shall also include the following performance standards that are applicable to the type of habitat found in the habitat survey:
- a. *Significant natural resources* shall not be cleared of vegetation and shall not be developed in any manner that would negatively impact the habitat, except under the following conditions:
 - i. Improvements that protect or enhance the enjoyment of the habitat, including but not limited to uncovered walkways, self-guided trails, and protective fences.
 - ii. If the *significant natural resources* cover greater than 50% of the tract, then up to 50% of the tract may be developed. Significant natural resources should be permanently protected in order of priority listed in the definition section such that any higher item on the list is a higher

priority. The undeveloped habitat areas shall be contiguous within the tract and with habitat areas on adjacent tracts to the maximum extent possible. The undeveloped habitat should have the maximum habitat interior to edge ratio possible (circular shape) to prevent habitat *fragmentation*. To the maximum extent possible the development design shall protect and connect as many priority *significant natural resources* as possible and such that wetlands, as defined under definition 22.c, are not filled and the protection area is maintained around the wetland and connected to other wetlands or streams or floodplain forest. Connectivity means that habitat areas are linked with areas of contiguous, natural vegetation that is at least 300 feet wide.

- iii. To provide for access to otherwise inaccessible parts of the parcel/development. If part of the parcel could be developed, but would be inaccessible due to the existence of *significant natural resources*, a road and/or utilities may be constructed through the *significant natural resources*. The road and/or utilities, however, shall cross at the narrowest practical point and shall be designed and constructed to the maximum extent possible to minimize impact to and *fragmentation* of the highest priority *significant natural resources*. Where *significant natural resources* must be negatively impacted, an equal area must be restored and protected on site, up to 50% of the tract.

b. Construction Performance Standards

Explanatory Note: Construction standards must be reviewed to ensure consistency with the local government's authority to regulate construction stormwater and with the local government's other stormwater and development programs. If the local government does not have a delegated sedimentation and erosion control program and approved ordinance, then local governments may not impose sedimentation and erosion controls pursuant to this ordinance.

North Carolina General Statute § 113A-60 allows local governments to develop jurisdiction specific sedimentation and erosion control ordinances. Local sedimentation and erosion control programs must be approved by the North Carolina Sedimentation Control Commission and may include provisions that exceed the minimum standards established in the Sedimentation Pollution Control Act, N.C. Gen. Stat. §113A-50 et seq. If the local government adopting a natural resources conservation ordinance also has a local sedimentation and erosion control program, the drafters encourage the local government to add the following measures to protect significant natural resource areas:

1. Minimize the clearing and grading of native vegetation and target development activities to areas with *non-native invasive species* vegetation. A list of non-native invasive plants in North Carolina can be found at <http://ncwildflower.org/invasives/list.htm>
2. Protect waterways by preventing clearing adjacent to waterways, and stabilize drainage ways.
3. Phase construction for construction sites larger than 25 acres to reduce time and area that disturbed soils are exposed.
4. Stabilize soils within 14 calendar days with a grass or mulch cover.
5. Protect steep slopes, and avoid clearing or grading existing steep slopes as much as is practical.
6. To the extent possible, employ advanced settling devices. Some examples include increased wet or dry storage volume, perforated risers, better internal geometry, use of baffles, skimmers and other outlet devices, and multiple cell construction.

If the local government adopting a natural resources conservation ordinance does not have a local sedimentation and erosion control program, then the Land Quality Section administers the North Carolina Sedimentation Control Act of 1973 under the North Carolina Sediment Sedimentation Control Commission and the local government may not adopt more stringent measures for construction stormwater.

c. Planning and Post-Construction Performance Standards:

- i. Runoff from *impervious surfaces* on the parcel shall not be discharged directly to the *significant natural resources* without vegetated filtration and energy dissipation.
- ii. Sewer lines, water lines, and other utility *infrastructure* shall not be constructed within 100 feet of perennial and intermittent streams to the maximum extent possible. All utility crossings shall be minimized. The directional bore stream crossing method (installation of utilities beneath the riverbed avoiding impacts to the stream and protection area) shall be used for utility crossings wherever practical, and the open stream crossing method shall only be used when water level is low and stream flow is minimal.
- iii. Maximum *impervious surface* coverage

Not more than fifteen (15) percent of the total tract area may be covered by buildings and any impervious surfaces.

Explanatory Note: The impervious surface is calculated over the entire tract and includes the conserved area. Therefor the impervious surface on the buildable area would be higher than 15% and up to 30%, provided a conservation area is required. Because the model overlay district is intended to cover only those areas with the most sensitive natural resources it is important to limit impervious surface in order to maintain natural water flow on the site and reduce stormwater runoff into sensitive areas. The 15% limit was chosen because this is the average level of impervious surface on conservation subdivisions in NC. It is ideal that highly sensitive areas not be zoned for intense development, industrial or commercial land uses. However, if the district in the community is extensive it may be necessary to raise the impervious surface limits to a higher proportion or to offer a density bonus for certain necessary land uses.

- iv. Pesticides (including insecticides and herbicides) shall not be used for maintenance of rights-of-way within one hundred (100) feet of perennial and fifty (50) feet of intermittent streams, or within the 100 year floodplain, unless the pesticide is labeled for use in aquatic systems or is part of the approved *Natural Resource Conservation Plan*.
- v. If curbs are used, curbing shall be with a 1:4 slope to allow passage of small animals.
- vi. Use bridges for all permanent roadway crossings of streams and associated wetlands. If culverts must be used, culvert must be designed

to allow passage of aquatic organisms by burying the culvert(s) in the stream bottom or bank by at least 1 foot. Stream relocation or widening shall be avoided but may be done if necessary providing state-of-the-art natural channel design and construction techniques are used.

- vii. The land surrounding built structures should be maintained in natural vegetation to the maximum extent possible. *Non-native invasive species* shall not be planted for any purpose.
- viii. The post-development condition should maintain connectivity of all *significant natural resources*, both within the tract and between adjacent tracts. Connectivity means that habitat areas are linked with areas of contiguous, natural vegetation that is at least 300 feet wide.
- ix. Site gas stations, car washes, and other potential “spill” land uses at least two hundred (200) feet from perennial and intermittent streams.

C. Approval of Natural Resources Conservation Plan:

Approval of a *Natural Resources Conservation Plan* does not abrogate any legal requirement to comply with the regulations of any other governmental agency, local, state, or federal, which may have jurisdiction over the proposed activity upon the land.

- 1. The **[insert relevant local government approval agency]** may impose conditions of approval as needed to ensure compliance with this ordinance. The conditions shall be included in the approval.
- 2. Approval will be issued by the **[insert relevant approval agency]** pursuant to this ordinance only if the applicant demonstrates that:
 - a. The natural resources conservation plan complies with this ordinance, including being consistent with the purposes and objectives set forth in this ordinance.
 - b. The natural resources conservation plan completely addresses the minimum performance standards outlined in this ordinance. If the **[insert appropriate local government approval agency here]** determines that the natural resources conservation plan is incomplete, the developer shall be notified of the deficient elements and shall be provided the opportunity to submit a complete natural resources conservation plan.
 - c. The proposed activity is compatible with public health, safety, and welfare.

Explanatory Note: Local governments may also choose to specify the expiration of unimplemented Natural Resources Conservation Plans and set a time period consistent with the local government's normal site plan approval period, which is typically two (2) years. Language adopted from the City of Tampa's Upland Habitat Protection Ordinance: {Approval of a natural resources conservation plan shall be effective for a period of two years from date of issue unless otherwise specified on the approved plan. Any plan approval not acted upon within the prescribed time limit shall become void and future work shall require a new plan approval.}

SECTION V. DEFINITIONS

Explanatory note: It is intended that local governments adjust the definitions to suit the needs and purpose of their ordinance. For example if the criteria contained within the definition of *significant natural resource area* are too stringent, the criteria can be changed to fit the local government's needs. The criteria within the definition of habitats and *significant natural resource areas* are based on the best current scientific knowledge and are not defined to meet any existing state or federal regulations.

1. *Adjacent*: Property abutting directly on the boundary of, touching, or sharing a common point.
2. *Aquatic Significant Natural Heritage Area*: an Aquatic Significant Natural Heritage Area as defined and mapped by the NC Natural Heritage Program. These are, "aquatic sites that are of special biodiversity significance. A site's significance may be due to the presence of rare species, exemplary or unique natural communities, or other important ecological features. The areas identified represent the approximate boundaries of ecologically significant sites."
3. *Building*: The word "building" includes the word "structure."
4. *Protection area*: A portion of property designated to protect natural areas from degradation or pollutants. Native vegetation is not removed from these areas unless it is with a goal of improving wildlife habitat through thinning of young, thick vegetation or prescribed burning.
5. *Developer*: The person, firm, corporation or legal entity that has financial or operational control over the development activity; or the person, firm, corporation, or legal entity in possession or control of the land when he/she directly or indirectly allowed the development activity, has benefited from it, or has failed to comply with any provision of this ordinance.
6. *Development*: The division of a parcel of land into two or more parcels, the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any building or other structure or facility, or any grading, soil removal or relocation, excavation or landfill, or any use or change in the use of any building or other structure or land or extension of the use of the land.⁴
7. *Development approval*: any of the following approvals issued by the local government regardless of the form of approval, that are for the development of land:
 - a. Any approval of an erosion and sedimentation control plan granted by a local government or by the North Carolina Sedimentation Control Commission under Article 4 of Chapter 113A of the General Statutes.
 - b. Any building permit issued under Article 9 of Chapter 143 of the General Statutes.

⁴ Adopted from "The Permit Extension Act of 2009" S.L. 2009-406

- c. Any approval by a county of sketch plans, preliminary plats, plats regarding a subdivision of land, a site specific development plan or a phased development plan, a development permit, or a building permit under Article 18 of Chapter 153A of the General Statutes.
 - d. Any approval by a municipality of sketch plans, preliminary plats, plats regarding a subdivision of land, a site specific development plan or a phased development plan, a development agreement, or a building permit under Article 19 of Chapter 160A of the General Statutes.⁵
8. *Disturbance area or disturbed area*: the area where vegetation clearing or land manipulation takes place for the purpose of development. This includes the area where fill material is removed or placed, the area affected by changes to natural hydrology, land converted from natural vegetation to lawns, golf courses and other *non-native vegetation*, and any area where development and related activities negatively impact wildlife habitat. This term includes the area lost to the construction of new lakes and other impoundments. It does not include alteration of existing disturbed areas (e.g. paving of an existing gravel road).
 9. *Existing conditions*: Conditions that exist at time of plan or plat submittal.
 10. *Final Plat*: The final map of all or a portion of a subdivision which is presented for final approval.
 11. *Flood or flooding*: A general and temporary condition of partial or complete inundation of normally dry land areas from: (1) the overflow of inland waters; and/or (2) The unusual and rapid accumulation of runoff of surface waters from any source.
 12. *Fragmentation*: Disruption in continuity and loss of habitat or *significant natural resources* by development of land or alteration of *natural vegetation*. Disruption or impediment of the natural movement and dispersal of wildlife within and between previously connected blocks of habitat caused by removing or altering the natural vegetation (forest, shrubland and grassland) within or between blocks of habitat or by building structures or other *infrastructure* within or between habitats and *significant natural resources*.
 13. *Impervious Surface*: A surface composed of any material that impedes or prevents infiltration of water into the soil. Impervious surfaces shall include but are not limited to impervious roofs, driveways, patios, sidewalks, parking areas, tennis courts, concrete or asphalt streets, solid decks, or compacted gravel surfaces. Wooden slatted decks and the water area of swimming pools shall be considered pervious. Calculations of impervious surfaces for streets shall include the area compacted for impermeable pavement or gravel base for impermeable pavement.

⁵ Adopted from "The Permit Extension Act of 2009" S.L. 2009-406

14. *Infrastructure*: includes roads, sidewalks, houses, commercial and industrial buildings, utilities and utility corridors, railways, docks, and other forms of built structures and impervious surfaces.
15. *Natural Resources Conservation Plan*: A document that details the specific required measures that the developer will take to minimize impacts and fragmentation of significant natural resources on the development site as described in section IV.B.
16. *Natural vegetation*: Vegetation, excluding any non-native vegetation, as it exists on the tract prior to any of the proposed development or disturbance associated with the proposed development that is not part of a disturbance area or a disturbed area.
17. *Non-native invasive species*: 1) non-native (or alien) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health.⁶
18. *Non-native vegetation*: non-native (or alien) to the ecosystem under consideration.⁷
19. *Plat*: A map, chart, or plan of a tract or parcel of land which is to be or which has been subdivided.
20. *Person* includes, without limitation, individuals, firms, partnerships, joint ventures, trusts, trustees, estates, corporations, associations, and any other similar entities.
21. *Qualified biologist*: A qualified biologist is defined as one or more of the following: a Wildlife Society Certified Wildlife Biologist (CWB), a Professional Wetlands Scientist (PWS) certified by the Society of Wetlands Scientists, a Certified Ecologist or Certified Senior Ecologist certified by the Ecological Society of America, a biologist currently employed by the NC Wildlife Resources Commission, US Fish and Wildlife Service, NC Natural Heritage Program, US Army Corps of Engineers, or a biologist that is prequalified by the NC Department of Transportation or the NC Environmental Enhancement Program to conduct biological or ecological surveys.
22. *Runoff*: Water from precipitation that flows off a property.
23. *Sediment*: Solid particulate matter, both mineral and organic that has been or is being transported by water, air, gravity, or ice from its site of origin.

⁶ U.S. Department of Agriculture. Native Invasive and other Plant Related Definitions. Retrieved 8/3/12.
http://www.ct.nrcs.usda.gov/plant_definitions.html

⁷ U.S. Department of Agriculture. Native Invasive and other Plant Related Definitions. Retrieved 8/3/12.
http://www.ct.nrcs.usda.gov/plant_definitions.html

24. *Sedimentation*: The process by which sediment resulting from accelerated erosion has been or is being transported off the site of the land-disturbing activity or into a lake or natural watercourse.

25. *Significant natural resource areas*: shall include those areas so designated by **[insert local government name here]** by virtue of containing rare or declining habitats or habitats that support rare species or a high diversity of species. These significant natural resource areas consist of the following natural resources and habitats which are:

- a. Jurisdictional and non-jurisdictional wetlands or endangered species habitat as delineated by state and federal agencies for environmental permitting.
- b. The presence of a natural community or communities as defined by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolinaⁱ within *Significant Natural Heritage Areas* identified and mapped by the NC Natural Heritage Program. *Significant Natural Heritage Areas* are not the same as significant natural resource areas and have their own definition.
- c. An average 750 foot radius upland area of any shape adjacent to isolated non-alluvial wetlands not connected to streams or not within conserved floodplains, starting from the edge of the water or watermark. This area includes a 150 foot radius protection area of symmetrical shape around the wetland water's edge. Wetlands are jurisdictional and non-jurisdictional wetlands with an area of water inundation over 100 square feet in size and of the following types defined by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina: Floodplain Pool, all types of Mountain Bogs and Fens, Upland Seepages, Piedmont and Mountain Upland Pools and Depressions and Coastal Plain Depression Communities and Interdune Ponds.
- d. Two hundred (200) feet on either side of permanent ("blue line") streams or rivers within *subwatersheds* (14 digit Hydrologic Unit Code) which support federally endangered or threatened aquatic species. These protection areas may be reduced to accommodate other priority habitat conservation on site, but shall not be less than 100 feet.
- e. A 300 foot wide area on either side of the waterway adjacent to Aquatic Significant Natural Heritage Areas identified by the NC Natural Heritage Program. These protection areas may be reduced to accommodate other priority habitat conservation on site, but shall not be less than 100 feet.

- f. Habitat that is sufficient (as determined by the qualified biologist) to conserve species occurrences on the tract of documented Natural Heritage Element Occurrences tracked by the NC Natural Heritage Program.
- g. Sufficient habitat as determined by the qualified biologist, of state listed wildlife species or federally listed plants observed opportunistically during site visits. The term “listed” includes designation as Endangered, Threatened, or Special Concern.
- h. High elevation habitats (Blue Ridge Mountains) which are forests above 3500 ft. in elevation that meet the definition of one of the following community types defined by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina: Fraser-fir forest, red spruce-Fraser fir forest, high elevation red oak forest, northern hardwood forest, and boulderfield forest.
- i. Beaches, dunes and estuarine islands (Coastal Plain) which are sand covered habitats occurring along the immediate ocean coastline and in estuaries. Dune vegetation is characterized by sand substrate dominated by open sand and grasses including sea oats grass and American beach grass. Some shrubs and exotic vegetation may be present. Upper beach vegetation can include sea rocket, Dixie sandmat, seaside sandmat, and seabeach amaranth. Estuarine islands include both naturally occurring islands and islands created by dredged materials in estuaries.
- j. A three hundred and thirty (330) foot wide area on all sides of a colonial waterbird nesting colony (in the Piedmont or Coastal Plain) encountered or as mapped by the NC Wildlife Resources Commission. A waterbird nesting colony is defined as an area where 2 or more colonial waterbirds are nesting or have nested within the past 2 years. Colonial waterbirds are any species of heron, egret, anhinga, tern, skimmer, plover, ibis, pelican, stork, and gull. These data are mapped (please see the user’s manual for details on obtaining these maps).
- k. A 650 foot protection area around rock outcrops, caves, and mines (Piedmont and Mountains). Rock outcrops which are natural features that contribute to a natural community structure consistent with physical characteristics of the underlying geological unit. For the purposes of this ordinance, rock outcrops include any of the following natural communities described by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina: High and low elevation rocky summit, High and low elevation granitic dome, Montane, Piedmont, and Coastal Plain acidic and mafic cliffs, Montane and Piedmont mafic and calcareous cliffs, Coastal Plain marl outcrops, Granitic flatrocks, High elevation mafic glade, Diabase glade, Ultramafic outcrop barren and Boulderfield forests.
- l. Maritime forests and shrublands found on the Coastal Plain on stabilized upper dunes and flats protected from salt water flooding and the most extreme salt spray. This habitat includes all types of Maritime Upland Forests as described by the NC Natural

Heritage Program in the Classification of the Natural Communities of North Carolina. Canopies of maritime forests can be dominated by live oak, sand laurel oak, loblolly pine, beech, American holly or hickory. The understory is often dominated by dense shrubs and vines. Any forests or shrublands along the coast or islands meeting this description will be considered maritime forest.

- m. Longleaf pine forest (Piedmont, Sandhills and Coastal Plain), defined as forests where 20% of the tree canopy consists of longleaf pine trees, regardless of age, within a stand at least 10 contiguous acres in size. These 10 acres can occur solely on the development tract or only a portion of the 10 acres can occur within the development tract.
- n. An undeveloped area at least 300 feet wide connecting isolated wetlands on the property.
- o. Floodplain forests with a canopy that is dominated by hardwood trees within the 100 year floodplain. Floodplain forests are also Coastal Floodplains and Piedmont and Mountain Floodplains within and outside of the 100 year floodplain as defined by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina.
- p. Wet Pine Savannas (Piedmont, Sandhills and Coast), Peatland Pocosins, Streamhead Pocosins (Sandhills and Coast) and Coastal Plain Nonalluvial Wetland Forests as defined by the NC Natural Heritage Program in the Classification of the Natural Communities of North Carolina.
- q. A 100 foot wide area adjacent to each side of perennial streams, rivers, lakes and reservoirs and a 50 foot wide area adjacent to intermittent streams.
- r. Mature hardwood forest consisting of greater than 25% hardwood trees native to the region over 50 years old or greater than 20 inches diameter to indicate “mature” trees (this will vary depending upon tree species and growing conditions).
- s. Lands designated by **[insert local government name]** as important for hunting, wildlife viewing, and other traditional forms of wildlife-related recreation, including lands outside of NC Wildlife Resources Commission Game Lands, within 150 yards of Game Land boundaries. These data are mapped (please see the user’s manual for details).
- t. Wildlife corridors and habitat connectors between significant natural resource areas where sufficient information exists to designate these areas or where these areas are part of the Biodiversity and Wildlife Habitat Assessment of the NC Department of Environment and Natural Resources Conservation Planning Tool.

26. *Significant natural resources*: significant natural resource areas that have been confirmed in site surveys by the *qualified biologist* and or state and federal permitting biologists.
27. *Significant Natural Heritage Area*: A Significant Natural Heritage Area as defined and mapped by the NC Natural Heritage Program. These are, “terrestrial sites that are of special biodiversity significance. A site’s significance may be due to the presence of rare species, exemplary or unique natural communities, or other important ecological features. The areas identified represent the approximate boundaries of ecologically significant sites.” These data are mapped (please see the user’s manual for details on obtaining these maps).
28. *Site Plan*: An accurately scaled development plan that shows existing conditions on a site as well as depicting details of proposed development.
29. *Stormwater* The flow of water which results from precipitation and which occurs immediately following rainfall or snowmelt.
30. *Subwatersheds which support federally endangered or threatened aquatic species*: These watersheds (14 digit Hydrologic Unit Code) have been surveyed by state and federal biologists and are known to contain federally endangered and threatened species. These data are mapped (please see the user’s manual for details on obtaining these maps).
31. *Tract*: Contiguous land under one ownership or under multiple ownership either developed as a single unit or recorded as a single unit.
32. *Wetlands*: Jurisdictional and non-jurisdictional wetlands as defined or delineated by state and federal regulatory agencies or those wetlands following the definition under the definition of significant natural resource areas (c.). Wetlands are important for flood and drought control and water pollutant filtration and act as sponges across the landscape.
33. *Wildlife corridors*: Areas of undeveloped land at least 300 feet wide that connects significant natural resource areas allowing wildlife to move between habitats.

ⁱ Shafale, M.P. 2012. Classification of the Natural Communities of North Carolina, Fourth Approximation. North Carolina Natural Heritage Program, Raleigh.

Overlay Districts

Conservation Area Overlay District, MCA

Conservation Area Overlay District

A Model Local Law



Metropolitan Conservation Alliance

a program of



MCA Technical Paper Series: No. 3

Conservation Area Overlay District

A Model Local Law

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FOREWORD

The tri-state region surrounding New York City is one of the most biologically diverse areas in the Northeast. The region owes its rich array of plants and animals to a combination of factors including geographic location, geological diversity, and topographic relief. These factors result in a wealth of landforms, ranging from broad river valleys, wind-swept ridgelines, limestone sinkholes, and coastal sand plains, to bogs, fens, vernal pools, marshes, and lakes. These natural landscapes and habitats are extremely important, not only for plants and animals, but for the health and economic well being of the over 21 million people that live and work in this region. These ecosystems provide recreational opportunities and scenic views, support wildlife populations, abate flooding, improve water quality, maintain a rural character within communities, and perform many other functions. Impacts on these valuable ecosystems increase as the metropolis sprawls rapidly outward, consuming large areas of the surrounding countryside.

Despite recognition that these functions (including biological diversity) are valued by our society, most ecosystem and wildlife protection efforts are accomplished by using sets of legal tools that were not specifically designed to accomplish these goals. For example, we protect wetlands (and wetland-dependent species) through a myriad of laws and review processes that are designed to permit activities within wetlands. Although we achieve *de facto* protection through such reviews, they occur on a site-by-site basis and do not address issues imperative to overall ecosystem health (such as habitat scale and connectivity). In fact, our current land-use review system, by taking a "hard look" at relatively small parcels of land (usually less than 100 acres) is actually a contributing factor to habitat and ecosystem fragmentation. The ultimate result of such fragmentation is that ecosystems lose species and vitality of functions.

This publication results from the realization that our current land use tools are not well suited to protect our biological heritage and the valuable functions of our ecosystems. The Metropolitan Conservation Alliance (a program of the Wildlife Conservation Society) seeks to develop innovative tools to ensure that wildlife populations, and the habitats vital for their existence, remain, while human communities strive to achieve a balance between community character, economic development, and the protection of natural resources. The key to maintaining a positive relationship between economic growth and ecological integrity lies in proper land use planning. Poor planning leads to urban sprawl (and thus decentralized, dysfunctional towns that fragment landscapes); good planning can result in human and ecological communities that thrive in tandem.

This document contains a creative tool for improved land-use planning—a model ordinance that can be adopted by municipalities to delineate conservation overlay districts. Although it was formerly entitled “Critical Environmental Area Overlay Ordinance,” the title has been changed to avoid confusion with the State program of the same name. The ordinance is based upon New York State law, but it can be adapted for use in other states that have a strong home rule authority. Conservation areas do not replace existing zoning districts, but instead overlay a new set of standards and incentives within those districts to better achieve natural resource protection goals. The ordinance provides guidance to shape developments into a form more compatible with natural resources. Within ecologically sensitive areas, the ordinance seeks to reduce habitat fragmentation, maintain biodiversity, and protect significant natural features. This model law enables towns to develop a template not only for ecological protection, but also for the siting of future development. It adds value to home rule by allowing a community to gain greater control over its own destiny. If integrated into a community's comprehensive or master plan, it can provide transparency as to which areas are ecologically important and which are less so. Such information is critical to developers, local decision-makers, and the public at large.

The Metropolitan Conservation Alliance considers this a work in progress. We welcome your comments on the utility of this document, as well as suggestions for its improvement.

MICHAEL W. KLEMENS, PH.D.
Director, Metropolitan Conservation Alliance
Wildlife Conservation Society

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§1.1 Title

This law shall be known, cited and referred to as the Conservation Area Overlay District Law.

§1.2 Authority

Enactment of this law by [insert name of municipality] is pursuant to §10 of the New York State Municipal Home Rule Law, which grants power to local governments to enact certain local laws. Municipal Home Rule Section 10(1)(ii)(a)(14) grants authority to pass laws for the purpose of protecting and enhancing the physical and visual environment.

§1.3 Definitions

Applicant: Any individual, firm, partnership, association, corporation, company, organization or other legal entity of any kind that requests the approval of the [insert relevant approval agency] to subdivide or otherwise develop lands in the designated conservation area overlay district.

Buffer Area: A designated area along the perimeter of a wetland or other critical area, which is regulated to minimize the impact of adjacent activities.

Conservation Area: A specific geographic area containing exceptional or unique environmental characteristics and designated a conservation area by [insert name of municipality].

Code Enforcement Officer: The building inspector, engineer or other officer authorized to enforce provisions of the municipal code and perform other activities as designated in this chapter.

Deposit: To fill, grade, discharge, emit, dump or place any material.

Development: Any construction or expansion of a building, structure or use of land or any change in the use of a building or structure, or any change in the use of land that requires the approval of an agency of the municipality.

Discharge: The emission of any water, substance or material into a wetland, watercourse, water body or their buffers, or into the atmosphere whether or not such substance causes pollution.

Disturbance: Land preparation, such as clearing, grading and filling, or the building of structures including roads and driveways. The condition of land disturbance is deemed to continue until the area of disturbance is returned to its original state or to a state as approved in accordance with the [insert name of municipality] Code.

Drain: To deplete or empty water contained in, on, or under the land by drawing off by degrees or in increments.

Dredge: To excavate or remove sediment, soil, mud, sand, shells, gravel or other aggregate.

Ecologically Significant Landscape: a specific geographic area defined by a physiographic feature or features (a watershed or portion of a watershed and its catchment, river valley, highlands, coastal plain, etc.) and/or cultural features (e.g., an agricultural region) that contains a variety of regionally important ecological systems and processes and the species that they support.

Ecosystem: A dynamic and interrelating complex of plant and animal communities and their associated environments.

Erosion: The wearing away of the ground surface as a result of mass wasting or the movement of wind, water, soil and/or ice.

Excavation: The digging out or removal of any material from the land.

Grading: Excavation or fill or any combination thereof, including but not limited to the establishment of a grade following the demolition of a structure or preparation of a site for development.

Hazardous Material: Material which is a present or potential danger to health or the environment when improperly stored, transported, disposed or otherwise managed and also as any other toxic, caustic or corrosive chemicals, radioactive materials or other substance listed in Title 40 of the Code of Federal Regulations or Part 366 of Title Six (6) of the Official Compilation of Codes, Rules and Regulations of the State of New York.

Hydric Soil: Soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper soil.

Landscape Linkages: A ecological corridor in which the complete range of community ecosystem processes continue to operate through time thereby allowing plants and animals to move through these physical connections.

Native Vegetation: Plant species which are indigenous to the area in question; or if the site has been cleared, species of a size and type that were on the site or reasonably could have been expected to have been found on the site at the time it was cleared.

Open Space: Publicly or privately held undeveloped lands used for the preservation or protection of natural resources (steep slopes, stream corridors, wetlands, wildlife) or managed for the production of resources (agricultural or pasture lands, forests) or any compatible combination thereof. Open space also includes lands with minimal or minor

improvements that are compatible with surrounding land uses and having a minimal impact on the environment.

Stable Angle of Repose: The degree of slope beyond which soils will slip downhill or become unstable.

Stand: A unit of tress that is relatively homogenous in age, structure, composition, and physical environment.

Traditional Neighborhood Development: A neighborhood that is compact and pedestrian friendly, comprising mixed land uses which incorporates houses within walking distance of retail shopping, employment centers, and mass transit nodes.

Wildlife Corridor: A landscape feature that facilitates the biologically effective transport of animals between larger patches of habitat dedicated to conservation functions. Such corridors may facilitate several kinds of traffic, including frequent foraging movements, seasonal migrations, or the once in a lifetime dispersion of juvenile animals. These may be transitional habitats and need not contain all the habitat elements required for the long-term survival or reproduction of migrants.

§1.4 Purpose and Objectives

- A. The purpose of the conservation area overlay district is to provide special controls over land use and development located in ecologically significant landscapes identified by the [insert name of municipality]. The overlay district is designed to preserve and protect ecosystems in their entirety to the greatest extent possible. This shall be accomplished by minimizing fragmentation of the landscape, maintaining biodiversity and specifically protecting unique environmental features identified as integral parts of the designated landscape. The overlay district shall establish standards and procedures for the use and development of land. The standards and procedures are designed to protect, conserve, enhance, restore, and maintain significant natural features and the ecological connections between them.
- B. The regulations contained in this overlay district seek to protect areas known to be ecologically sensitive to disturbance by development, or that are ecologically important because they support threatened, endangered or regionally declining species, maintain connections within a landscape, support a high diversity of species or constitute rare or unusual habitats.
- C. These regulations are intended to:
 - 1. Maintain the diversity of wildlife species and habitat found in the conservation area.
 - 2. Protect habitat areas from activities that would cause immediate or foreseeable danger to significant wildlife habitat.

3. Ensure that land uses and development are planned and designed to be harmonious with wildlife habitat and the species that depend on that habitat, and to protect the full range of habitats and species in the area.
 4. Preserve and protect open space to the maximum extent possible by requiring the clustering of permitted development and limiting intrusion into natural habitat.
 5. Connect open spaces with each other to the greatest extent possible to allow for the preservation of wildlife habitat and other environmental features.
 6. Reduce the amount of nutrients, sediment, organic matter, pesticides, and other harmful substances that reach watercourses, wetlands, or subsurface water bodies by using scientifically proven processes including filtration, deposition, absorption, plant uptake, and denitrification, and by improving infiltration, encouraging sheet flow, and stabilizing concentrated flows.
 7. Improve and maintain the safety, reliability, and adequacy of the water supply for domestic, agricultural, commercial, industrial, and recreational uses along with sustaining diverse populations of aquatic flora and fauna.
 8. Retain areas of annual flooding, floodplains, water areas, and wetlands in their natural state to the maximum extent possible to preserve water quality and protect water retention capabilities, facilitate recharging of the water table, and natural functions.
 9. Protect steep slopes and other areas of erosion or potential erosion to the greatest extent possible by minimizing the impacts in these areas by properly managing disturbances.
 10. Protect the quality of air, water, and soil and maintain minimum noise levels in sensitive environmental areas.
 11. Protect areas generally recognized for their special or unique vegetative features or ecological communities including natural vegetation along lakes, rivers, wetlands and streams, woodlands, stands of trees and mature forests.
 12. Protect and enhance scenic resources including landscapes, ridgelines, meadows, and geologic features that have a special scenic character or a historic or aesthetic interest or value.
- D. The regulations contained in this law are not intended to be substituted for other general zoning district provisions, but should be considered as additional requirements to be met by applicants, prior to project approval. The purpose of the overlay district is to provide the [insert name of municipality] with an additional level of review and regulation to control how land use and development, permitted by the [insert name of municipality]'s primary zoning districts, occurs in sensitive or unique environmental areas.

§2.1 Findings of Fact and Intent

§2.2 Wetlands, Water Bodies, Watercourses

A. Findings of Fact

1. Wetlands and watercourses serve multiple functions, including to:
 - a. Provide surface water, recharge groundwater and aquifers, serve as chemical and biological oxidation basins and function as settling basins for naturally occurring sedimentation.
 - b. Control flooding and stormwater runoff by regulating natural flows, storing water and desynchronizing flows.
 - c. Provide critical nesting, migratory stopover and over-wintering habitats for a diversity of wildlife.
 - d. Support unique vegetative associations of various types.
 - e. Provide areas of unusually high plant productivity, which support significant wildlife diversity and abundance.
 - f. Provide breeding and spawning grounds, nursery habitat and food for various species of fish and amphibians.
 - g. Serve as nutrient traps for nitrogen and phosphorous and act as filters for surface water pollutants.
 - h. Help to maintain biospheric stability by supporting particularly efficient photosynthesizers capable of producing significant amounts of oxygen and supporting bacteria which process excess nitrates and nitrogenous pollutants and return them to the atmosphere as inert nitrogen gas.
 - i. Provide open space and visual relief from intense land development.
 - j. Serve as outdoor laboratories and living classrooms for the study and appreciation of natural history, ecology and biology.

B. Intent

Development in and around wetlands, water bodies or watercourses shall not threaten public safety, the natural environment or cause nuisance by:

1. Impeding or reducing flood flows, reducing flood storage areas or destroying storm barriers, thereby resulting in increased flood heights, stream scouring, flood frequency or increased velocity over land.
2. Increasing water pollution through location of any domestic wastewater disposal system in wet soil; inappropriate siting of stormwater control facilities; unauthorized application of fertilizers, pesticides, herbicides and algicides; disposal of solid wastes at inappropriate sites; creation of unstabilized fills; or the destruction of wetland soils and vegetation serving pollution and sediment control functions.
3. Increasing erosion.
4. Decreasing breeding, nesting and feeding areas for species of waterfowl and shorebirds, including those rare and endangered.

5. Interfering with the exchange of nutrients needed by fish and other forms of wildlife.
6. Decreasing habitat for fish and wildlife.
7. Adversely altering the recharge or discharge functions of wetlands, thereby impacting groundwater or surface water supplies.
8. Significantly altering the wetland hydro-period and thereby causing either short- or long-term changes in vegetative composition, soil characteristics, and nutrient recycling or water chemistry.
9. Destroying sites needed for educational and scientific research, such as outdoor biophysical laboratories, living classrooms and training areas.
10. Interfering with public rights in navigable waters and the recreational opportunities provided by wetlands for fishing, boating, hiking, bird watching, photography, camping and other passive uses.
11. Destroying or damaging aesthetic and property values, including significant public viewsheds.

§2.3 Floodplains

A. Findings of Fact

1. Floodplains temporarily store water and decrease storm velocity. These functions are enhanced by vegetation which enable water to spread horizontally and move more slowly.
2. Floodplains help control runoff, decrease the potential for catastrophic flooding, and allow for the infiltration of water into the groundwater table.
3. Floodplains capture and sequester sediment and nutrients thereby enhancing the quality of water.
4. Floodplain trees and plants stabilize riverbanks thereby reducing erosion.
5. Floodplains provide critical habitat for wildlife and aquatic species such as resting, feeding and nesting areas. These areas provide a transition zone between watercourses and uplands.
6. Damages from flooding and erosion can be extensive, including destruction or loss of housing, public facilities, and injury to and loss of human life.

B. Intent

The provisions of this law are intended to:

1. Regulate uses which are dangerous to health, safety and property due to water or erosion hazards or which cause increases in erosion or flood heights or velocities.
2. Require that uses vulnerable to flooding, including structures, be protected against flood damage.
3. Control the alteration of natural floodplains, stream channels and natural protective barriers that are involved in the accommodation of floodwaters.
4. Control filling, grading, dredging and other development that may increase erosion or flood damages.

5. Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.
6. Prevent the removal of floodplain vegetation and the creation of impermeable surfaces that would lessen the natural functions of a floodplain ecosystem.

§2.4 Aquifers

A. Findings of Fact

1. Aquifers store water for varying periods of time acting as underground reservoirs.
2. Springs and spring fed habitat are important for various species.
3. Aquifers contribute significantly to surface water and are important to sustaining vegetation.
4. Activities that prevent infiltration into aquifers cause increased runoff.
5. The ground water underlying the conservation area district is a major source of existing and potential future ground water supply, including drinking water, and, as such, should be protected from contamination.
6. Unregulated development in areas with sensitive hydrogeologic formations of stratified drift aquifers and their primary recharge areas may threaten the quality of such ground water supplies and related water resources in the conservation areas district posing potential public health and safety hazards.
7. Preventive measures are needed to control the development of land and to control the discharge and storage of hazardous materials within the hydrologic formations to limit the adverse impacts that such development and discharge can create.

B. Intent

The provisions of this law are intended to:

1. Protect the public health, safety and welfare through the preservation of the ground-water resources in order to ensure the future supply of safe and healthful drinking water in the conservation area, by reducing the potential for ground-water contamination.

§2.5 Scenic Resources

A. Findings of Fact

1. Many landscape and geologic features and cultural improvements have a unique scenic character, including historic or aesthetic interest or value.
2. These scenic resources enhance the quality of life for residents and visitors and maintain the historical, cultural, and ecological traditions of the community.
3. Resources that are recognized for their scenic beauty also provide critical habitat for wildlife. For example, ridgelines, open fields, and meadows may also provide critical wildlife habitat.

B. Intent

The provisions of this law are intended to:

1. Preserve and protect scenic resources such as landscapes, ridgelines and geologic features that represent or reflect the character of the [insert name of municipality].
2. Safeguard scenic resources, aesthetics and cultural heritage, as embodied in the landscape and geologic features.
3. Foster civic pride in the beauty of the [insert name of municipality].
4. Promote the use of scenic and aesthetic resources for the education, pleasure and welfare of the people of the [insert name of municipality].

§2.6 Steep Slopes

A. Findings of Fact

1. Steep slopes are environmentally sensitive landforms and valuable natural resources, which are of benefit to the entire [insert name of municipality] and the surrounding region. The environmental sensitivity of steep slopes often results from such features as shallow soils over bedrock, bedrock features, groundwater seeps, or watercourses and wetlands found on or adjacent to steep slopes.
2. Destruction of steep slopes by unregulated regrading, filling, excavation, building, clearing and other such acts, is inconsistent with the natural condition or acceptable uses of steep slopes. Steep slopes provide critical habitat for some wildlife species.
3. Effective protection of steep slopes requires preservation. Where steep slopes must be disturbed, careful regulation, including stringent mitigating measures of disturbance of soil and vegetation on steep slopes is necessary.
4. Improper management of disturbances to steep slopes can aggravate erosion and sedimentation beyond rates experienced in natural geomorphological processes. Erosion and sedimentation often include the loss of topsoil, a valuable natural resource, and can result in the disturbance of habitats, alteration of drainage patterns, obstruction of drainage structures, damage to surface and subsurface hydrology and intensification of flooding.
5. Inadequate control of disturbances to steep slopes can lead to the failure of slopes and mass-movement of earth, damage to natural environment, man-made structures and personal safety, and the loss of aesthetically pleasing landscapes.

B. Intent

The provisions of this law are intended to:

1. Preserve steep slopes to the greatest extent practicable and regulate their use to protect the public interest by perpetuating benefits provided by steep slopes and

by ensuring the minimization of detrimental effects through the practice of properly managed disturbance of steep slopes.

2. Reduce water runoff, soil erosion, and rockslides by minimizing grading and by requiring revegetation.
3. Permit intensity of development compatible with the natural character of the slope or hillside by considering degree of slope, significant landforms, soil suitability, and existing drainage patterns.

§2.7 Woodlands, Forests and Trees

A. Findings of Fact

1. The preservation and maintenance of trees is necessary to protect the health, safety, environment, and general welfare of the inhabitants of the [insert name of municipality].
2. Trees provide necessary shade and cooling, greenspace and aesthetic appeal, impede soil erosion, aid water absorption, and generally enhance the quality of life within the [insert name of municipality].
3. Forests and stands of trees provide important habitat for wildlife. Forests and plants also provide important ecosystem functions such as carbon sequestration, filtering pollutants from the air, moderating climate, and moderating surface water runoff.
4. The destruction and damage of trees and the indiscriminate and excessive cutting of trees causes barren and unsightly conditions, creates surface drainage problems, increases municipal costs to control drainage, impairs stability of real property values, and adversely affects the character of the community.

B. Intent

The provisions of this law are intended to:

1. To preserve and protect woodlands, stands of trees, mature forests and shrubs, including specimen trees, rare species, and habitats by regulating or controlling land use and development in those areas.
2. Preserve the physical environment, biotic resources, and trophic networks needed to support productive forests by maintaining compositional and structural diversity.
3. Provide a diversity of seral stages, cover types, and stand structures that provide habitat for many native species and a framework for all essential ecosystem processes.
4. Preserve forest soil stability, fertility and vitality by eliminating activities that result in erosion, acidification, loss of nutrients and compaction.

§2.8 Wildlife and Habitat

A. Findings of Fact

1. Areas that contain a diversity of wildlife species are a natural resource of local, state, national and global significance.
2. Wildlife plays important roles in maintaining ecosystems through ecological interactions such as predation, pollination and seed dispersal.
3. Wildlife provides valuable educational and recreational opportunities.
4. Wildlife populations can only be sustained if adequate measures are taken to maintain the habitats they require and the ecological connections between these habitats. Habitat protection enables wildlife to persist in a region as well as enabling the continuation of vital natural processes.
5. Poorly planned land development causes the fragmentation, and reduces the functioning of habitat.
6. The effective protection of ecosystems is dependent on a basic understanding that few ecosystems are wholly contained within one municipality. Therefore, intermunicipal cooperation is necessary to ensure that ecologically sensitive landscapes are protected and maintained.

B. Intent.

The provisions of this law are intended to:

1. Identify critical fish and wildlife habitat areas.
2. Protect fish and wildlife habitat and their ecological connections.
3. Maintain populations of wildlife species and the habitats they depend upon.
4. Provide for breeding, nesting, feeding and other life functions required to sustain a diversity of wildlife including, species declining in the region and rare, endangered, and threatened species.
5. Minimize fragmentation of habitats by protecting open space and by maintaining interconnecting corridors to form a continuous network of wildlife habitats and ecosystems.
6. Participate in intermunicipal agreements that will ensure the maintenance of regional critical ecosystems and their ecological connections.

§3.1 Official Map

The locations and boundaries of all the conservation area(s) shall be delineated on an official set of maps on file at the Municipal Clerk's office. These maps shall be known and cited as the "Official Conservation Areas Maps".

§3.2 Conservation Area Overlay Designation

- ### **A.**
- To protect an ecosystem, the natural resources identified in §3.3 found on a large undisturbed landscape must be identified and mapped. It is critical that the areas

within the ecologically significant landscape remain undisturbed allowing critical ecosystem processes to continue to function.

- B. The boundaries of the conservation area shall be included on the Official Conservation Areas Map at an appropriate scale and with a metes and bounds description such that the boundaries of the Conservation Area can be clearly identified.
- C. Designation of the conservation area shall include identification of all natural resources as described by the designation criteria set forth in § 3.3. The identified resources shall be included on the conservation area map at an appropriate scale and description such that the resources can be clearly identified.
- D. The zoning map, soil survey maps, topographical maps, aerial photographs, state and national wetlands inventories, wildlife inventories, field studies and any other inventory methods as required by the [insert relevant approval agency] shall be used to identify the natural resources within the conservation area.
- E. Written justification supporting the decision to designate the particular area as a conservation area shall be filed at the Municipal Clerk's office.
- F. If at any time the maps reference in this section are not prepared or properly filed, applicants in any conservation area shall be required to submit maps of their land containing the requisite infrastructure

§3.3 Designation Criteria

The following natural resource characteristics shall be used in designating the conservation area.

- A. Wetlands, Water Bodies, Watercourses
 - 1. Wetlands shall include and be characterized as follows:
 - a. Lands that qualify or are commonly referred to as marshes, swamps, sloughs, bogs, flats, vernal pools, wetland meadows and other wetlands whether flooded at all times, flooded seasonally or having a water table at least three consecutive months of the year within six inches of the ground surface or supporting aquatic or semiaquatic vegetation.
 - b. Lands and submerged lands containing remnants of non-aquatic or semiaquatic vegetation that has died because of wet conditions over a sufficiently long period, provided that such wet conditions do not exceed a maximum seasonal water depth of six feet.
 - c. Lands and water substantially enclosed by aquatic or semiaquatic vegetation as set forth in subsection (a) of this section or by dead vegetation as set forth in subsection (b) of this section, the regulation of which is necessary to protect and preserve the aquatic and semiaquatic vegetation.

- d. The water overlying the areas set forth in subsections (a) and (b) of this section and the lands underlying subsection (c) of this section.
 - e. Lands and submerged lands containing sensitive soils where the slope is less than 3%, typical wetlands vegetation, and a groundwater table within six inches of the surface for over three consecutive months in the year.
 - f. Soil types that are poorly drained, alluvial or floodplain soil.
2. Watercourses shall include and be characterized as follows:
- a. A running stream of water; a natural stream fed from permanent or natural sources, including rivers, creeks, springs, runs and rivulets; a stream, usually flowing in a particular direction, though it need not flow continuously.
 - b. The watercourse must flow in a definite channel, having a bed or banks. It usually discharges itself into some other stream or body of water. It must be something more than mere surface drainage over the entire face of the tract of land, occasioned by unusual freshets or other extraordinary causes.
3. Water bodies shall include and be characterized as follows:
- a. Any natural or artificial pond, lake, reservoir or other area which ordinarily or intermittently contains water and which has a discernable shoreline.
4. Establishing and interpreting wetland and buffer area boundaries.
- a. Wetlands, water bodies and watercourses and their adjacent critical terrestrial habitat that are ecologically related and cannot be considered in isolation. Buffers are extremely important ecologically and many species depend on the uplands that border wetlands for critical habitat.
 - b. The boundaries of the wetlands, water bodies and watercourse and buffer areas shall be determined by a field investigator and surveyed by a licensed surveyor. The buffer area shall extend to the extent deemed necessary to protect wildlife and other critical resources.

B. Floodplains

1. Floodplains shall include and be characterized as follows:
- a. Any land area susceptible to being inundated by water as a result of the overflow of inland or tidal waters or the unusual and rapid accumulation of runoff of surface waters from any source.
 - b. Land subject to a one-percent or greater chance of flooding in any given year. This is commonly referred to as the "one-hundred year floodplain."
 - c. Floodway or channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot.

C. Aquifers

1. Aquifers shall include and be characterized as follows:
 - a. A consolidated or unconsolidated geologic formation, group of formations or part of a formation capable of yielding a significant amount of groundwater to wells, springs or infiltration galleries.
 - b. Soil or rock units that have substantial porosity plus sufficient permeability to permit storage or economic extraction of water.

D. Scenic Resources

1. General Characteristics. A scenic resource shall be found to possess one (1) or more of the following general characteristics.
 - a. Illustrative of a natural landscape feature, geologic feature or improvement representing the natural character and history of the [insert name of municipality].
 - b. Possessing a unique overall quality of scenic beauty, scale, texture and form.
2. Specific Characteristics. A scenic resource shall be found to have one (1) or more of the following specific characteristics:
 - a. Roadways
 - i. The natural landscape on the edge of the roadway consists of dense forest edge with extensive, healthy or unusual variety of major rock outcroppings.
 - ii. A roadway that provides a scenic vista or a panoramic view over one (1) or more of the other types of resources such as slopes, ridgelines, open fields and meadows, water's edge, cultural places, and trees.
 - iii. The roadway has a narrow, winding quality linking it with the rural past.
 - iv. The roadway has a special character defined as identified by the [insert name of municipality].
 - b. Slopes
 - i. A rise in elevation providing the focal point of a vista or elements of a panoramic view.
 - ii. An elevation which because of steepness, geologic structure, water flow or vegetation is aesthetically pleasing.
 - iii. Areas that provide critical habitat for threatened and endangered and/or regionally declining species.
 - c. Ridgelines
 - i. The crest of hills that are the focal points of vistas or are elements of a panoramic view.
 - ii. Linear elements that define the horizon or define progression of significant elevation.
 - iii. Important wildlife dispersal areas.
 - d. Open fields and meadows
 - i. A large open area where the predominant vegetation consists of herbaceous growth and shrubs that provide unique and distinct landscape scenery significantly different from a predominantly wooded landscape.

- ii. The open field or meadow provides a visual link to the agricultural history of the [insert name of municipality].
 - iii. The open field provides an important visual focus for stands of trees, stone walls or fences.
 - iv. Areas of critical wildlife habitat.
- e. Water's edge
 - i. Reservoirs, ponds, lakes and permanently running streams and brooks that are focal points of a vista or are elements of a panoramic view.
 - ii. The reservoir, pond, lake or permanently running stream or brook provides a aesthetically scenic view.
- f. Cultural places
 - i. Settings and locations, including buildings walls, fences, cemeteries, markers, monuments, statues, other structures and the surrounding areas which provide a visual link to the culture and history of the [insert name of municipality].
 - ii. Any historically unique or significant area.
 - iii. Any property designated or eligible for designation on an official list of historic places.
- g. Trees
 - i. Unique trees with regard to species diversity and species assemblages.
 - ii. Any tree or stand of trees with historic significance.
 - iii. Landmark trees, defined as any tree which is representative of a particular species in form, size (height, diameter breast height, crown width) and age-potential and has reached the limits of one (1) of these characteristics, or is unusual based on its location or history, and is identified as contributing significantly to the character or visual amenity of the town.

E. Steep Slopes

- 1. Steep slopes shall include and be characterized as follows:
 - a. All areas in the conservation area with fifteen percent (15%) slope or greater.
 - b. Other steep slopes or highly erodable areas as delineated by soil survey reports prepared by the Soil Conservation Service, on topographic maps produced by the United States Geologic Service, or by field surveys.

F. Woodland, Forests and Trees

- 1. Woodlands and trees shall include and be characterized as follows:
 - a. Five or more contiguous acres of woodland.
 - b. All areas less than five acres with stands of trees measuring six (6) inches in diameter at any point 4.5 feet above existing ground level.

G. Wildlife and Wildlife Habitat

1. Wildlife and wildlife habitat shall include and be characterized as follows:
 - a. Areas where endangered, threatened, regionally declining, and ecologically sensitive species occur.
 - b. Habitats and species of local importance.
 - c. Lakes, ponds, streams, rivers and their submerged aquatic beds that provide fish and wildlife habitat.
 - d. Nature preserves or conservation areas.
 - e. Wildlife corridors and landscape linkages.
 - f. Areas with one of the following attributes: wildlife diversity, significant seasonal ranges for wildlife, wildlife migration corridors, limited and/or highly vulnerable habitat.
 - g. Significant habitat areas include habitats that are limited, declining or highly vulnerable to degradation and destruction, and that support species and/or ecological communities that are endangered, threatened, rare or ecologically sensitive to such changes.
 - h. Wildlife species that are unique, rare, threatened, endangered, regionally declining or otherwise deemed to be of significance to the [insert name of municipality].

§4.1 Performance Standards

The following standards are designed to ensure that resources contained in the conservation area are impacted to the least possible extent. Performance standards ensure that the landscape will remain integrated and that resources can function in a natural state. The following standards are applicable to all development activities that occur within the Conservation Overlay District.

§4.2 Fragmentation

- A. Objectives. To decrease to the greatest extent possible the fragmentation of the conservation area so that natural processes are not disrupted and biodiversity is not diminished.
- B. The objectives shall be attained by applying the following standards:
 1. To the greatest extent possible, development shall be limited to existing fragmented areas.
 2. If development in sensitive environmental areas cannot be avoided, development should be planned and technology used to maintain ecological connections and protect critical resources.
 3. Population nodes should be placed in close proximity to existing development to minimize the need for additional road and sewage system construction.
 4. The rehabilitation and restoration of hamlets, use of traditional neighborhood development, or other methods of compact development should be used to the

greatest extent possible to avoid degradation of critical resources and further fragmentation of the landscape.

§4.3 Clustering

- A. The planning board is authorized to require cluster development for any project in a conservation area. Such cluster development shall be designed to conform to the performance standards and the purposes and objectives contained within this law.
- B. A cluster development shall mean a subdivision plat or plats, approved pursuant to the [insert name of municipality] subdivision regulations, in which the applicable standards of the zoning law are modified to provide an alternative permitted method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks, and landscaping in order to preserve the natural and scenic qualities of open lands.

§4.4 Density Calculations

- A. All water bodies, watercourses, and wetlands, as defined on the Official Conservation Areas Map, shall be excluded from the land area used by an applicant for development in the calculation of permitted densities for construction.
- B. Also excluded in the calculation shall be all land areas with a slope of 50% or greater and 50% of all land areas where the slope is in excess of 15% but less than 50%.
- C. Areas of significant wildlife habitat, including landscape linkages and wildlife corridors shall be excluded from the land areas used by applicant for development in the calculation of permitted densities for construction.

§4.5 Erosion and Sedimentation Control

- A. Objective. To safeguard persons, protect property, prevent damage to the environment, and promote the public welfare by guiding, regulating, and controlling the design, construction, use, and maintenance of any development or other activity which disturbs or breaks the topsoil or results in the movement of earth on land.
- B. General Principles. The objective is to control soil erosion and sedimentation caused by development. Measures taken to control erosion and sedimentation shall be adequate to ensure that sediment is not transported from the site by a storm event of ten-year frequency or less. The following principles shall apply to all development:
 - 1. Selection of Control Measures. The selection of erosion and sedimentation control measures shall be based on assessment of the probable frequency of climatic and other events likely to contribute to erosion, and on an evaluation of the risks, costs, and benefits involved.

2. **Protection of Adjacent Properties.** Properties adjacent to the site of a land disturbance shall be protected from sediment deposition. This may be accomplished by preserving a well-vegetated buffer strip around the lower perimeter of the land disturbance, by installing perimeter controls such as sediment barriers, filters, dikes, or sediment basins, or by a combination of such measures.
3. **Cut and Fill Slopes.** Development shall reflect the topography and soils of the site so as to create the least potential for erosion. Areas of steep slopes where high cuts and fills may be required shall be avoided wherever possible, and natural contours shall be followed as closely as possible. In the design of cut and fill slopes, consideration must be given to the length and steepness of the slope, the soil type, upslope drainage area, groundwater conditions and other applicable factors. Slopes, which are found to be eroding excessively within one year of construction, must be provided with additional stabilizing measures until the problem is corrected.
4. **Vegetation.** Natural vegetation shall be retained and protected wherever possible. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation and related structures shall be installed as soon as practical, or within the time specified in the permit. Permanent vegetation shall not be considered established until a ground cover is achieved which, in the opinion of the code enforcement officer, is mature enough to control soil erosion satisfactorily and to survive severe weather conditions. The smallest practical area of land shall be exposed for the shortest practical time during development.
5. **Stabilization of Denuded Areas and Soil Stockpiles.** Permanent or temporary soil stabilization must be applied to denuded areas within 15 days after final grade is reached on any portion of the site. Soil stabilization must also be applied within 15 days to denuded areas which may not be at final grade but will remain dormant (undisturbed) for longer than 60 days. Soil stabilization refers to measures that protect soil from the erosive forces of raindrop impact and flowing water. Applicable practices include vegetative establishment, mulching, and the early application of gravel base on areas to be paved.
6. **Sediment basins, debris basins, desilting basins, silt traps or filters** shall be installed and maintained to remove sediment from runoff waters from land undergoing development.
7. **Timing and Stabilization of Sediment Trapping Measures.** Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment on-site must be constructed as a first step in grading and must be made functional before upslope land disturbance takes place. Earthen structures such as dams, dikes, and diversions must be seeded and mulched within 15 days of installation.
8. **Stabilization of Waterways and Outlets.** All on-site stormwater conveyance channels shall be designed and constructed to withstand the expected velocity of flow from a 10-year frequency storm without erosion. Stabilization adequate to prevent erosion must also be provided at the outlets of all pipes and paved channels.

9. Storm Sewer Inlet Protection. All storm sewer inlets which are made operable during construction shall be protected so that sediment-laden water will not enter the conveyance system without first being filtered or otherwise treated to remove sediment.
10. Working in or Crossing Watercourses. Construction vehicles should be kept out of watercourses to the greatest extent possible. Where in-channel work is necessary, precautions shall be taken to stabilize the work area during construction to minimize erosion. The channel (including bed and banks) must be restabilized immediately after in-channel work is completed.
11. Stormwater Management Criteria for Controlling Off-Site Erosion. Provisions shall be made to accommodate the increased runoff caused by changed soil and surface conditions during and after development. Drainageways shall be designed so that the final gradients and the resultant velocities of discharges will not create additional erosion.
12. Underground Utility Construction. The construction of underground utility lines involving installation, maintenance or repair which disturbs more than 10,000 square feet shall be subject to the following criteria:
 - a. No more than 500 feet of trench are to be opened at one time.
 - b. Where consistent with safety and space consideration, excavated material is to be placed on the uphill side of trenches.
 - c. Trench dewatering devices shall discharge in a manner that will not adversely affect flowing streams, drainage systems, or off-site property.
13. Construction Access Routes. Wherever construction vehicle access routes intersect paved public roads, provisions shall be made to minimize the transport of sediment (mud) by runoff or vehicle tracking onto the paved surface. Where sediment is transported onto a public road surface, the roads shall be cleaned thoroughly at the end of each day. Sediment shall be removed from roads by shoveling or sweeping and transported to a sediment control area. Street washing shall be allowed only after sediment is removed in this manner.
14. Disposition of Temporary Measures. All temporary erosion and sediment control measures shall be disposed of within 30 days after final site stabilization is achieved or after the temporary measures are no longer needed, unless otherwise authorized by [insert relevant approval agency]. Trapped sediment and other disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.
15. Maintenance. All temporary and permanent erosion and sediment control practices, aesthetics and the requirements of continuing maintenance shall be considered.
16. Aesthetics. Erosion and sediment control practices must be maintained and repaired as needed to assure continued performance of their intended function.

§4.6 Filling and Grading

- A. Objectives. To provide for the proper use of land and to remove the dangers caused by soil erosion, filling operations, the stripping of soil and alteration to the natural contour of earth as it presently exists in the conservation area overlay district. To avoid the depletion of trees, soil and natural vegetative, damage to agricultural crops, and depreciation in value of and physical damage to properties adjacent to such dangers.
- B. Exempt Properties and Uses

The following uses shall be exempt from the provisions of this section:

1. Any filling or grading operation where a building permit has been duly issued, provided that it is limited in area and bulk to that strictly essential for, and limited to the extent of, the foundation, walls, and basement of such building or for the construction of a wall, driveway, sidewalk, swimming pool, service connections or other structure or underground tank, and which is actually replaced by a basement foundation, wall, swimming pool, tank or other underground structure, does not involve any change in the existing grade and contour.
2. Any filling or grading operation, which shall constitute repair, maintenance or resurfacing of an existing sidewalk, walk or driveway, provided that such sidewalk, walk or driveway is not enlarged or extended.
3. Nothing in this chapter shall be construed as to prevent the owner or occupant of a premises used as a residence from placing or moving topsoil for lawn maintenance or repair or for landscaping purposes, provided that no power tools are used other than a garden tractor not exceeding six horsepower.

C. Findings

The [insert relevant approval agency] shall make the following findings before approving any development involving grading and filling:

1. The work will not interfere with surface drainage, endanger any street, road, highway or municipal facility or interfere with support or drainage of adjoining properties.
2. The property can be restored and rehabilitated so that it will not cause soil erosion, drainage problems or create disturbance of land in conflict with the established purposes of this chapter.
3. The work or its results will not cause substantial traffic hazards, vibrations, noise, dust or sand.
4. The work or its results shall conform to the natural topography of land and will not change the character of the conservation area overlay district.
5. The period of time and the methods for the completion of the work are reasonable.

6. Accessibility of the property involved in the application to fire and police protection; access of light and air to the property and to adjoining properties; traffic conditions; transportation requirements and facilities; the general safety, health, peace, comfort and general welfare of the community at large; and whether the location and size of the proposed use, the nature and intensity of the operations involved, the size of the site in relation to the use, the location of the site with respect to existing or future streets giving access to it and parks and drainage systems shall be such that it will be in harmony with the Comprehensive Plan and Zoning Law of the [insert name of municipality].
7. Operations in connection with any use shall not be more objectionable to nearby properties by reason of noise, fumes, vibration or lights than would be the operations of any use permitted by right.
8. No filling operation shall be conducted which results in the deposit of topsoil, earth, sand, gravel, rock or other substance which will interfere with any natural watercourse or the natural drainage of the property; and at the termination of the permit, the premises shall be roughly graded and, if necessary, other provisions made of a permanent nature so that the natural drainage shall be fully restored.
9. There shall be no interference with existing drainage, nor shall the filling operation divert or cause water to collect on the property of others or interfere with or overload any existing or planned drainage facilities, endanger any road, street or highway or produce or enlarge areas from which water will not drain. Provisions shall be made for the temporary drainage to be effective upon completion of the operation.

D. Conditions

The [insert relevant approval agency] is authorized to impose, in granting approval, the following conditions:

1. The establishment of the permitted period of time for the completion of the work.
2. The establishment of hours and days of operation, taking into account the nature of the area in which the work is to be performed.
3. The construction of fencing and other safety precautions, specifying the height and type of fencing or precaution and the location of the same.
4. The maximum slope and depth of any fill and the height and slope of any material moved or removed. All excavations and all conformations resulting from grading and filling operations shall be drained so there shall be no water or pools gathering in the bottom of such property.
5. The provisions of access roads or other adequate means of access or ingress shall have a surface satisfactory to the [insert relevant approval agency].
6. The establishment of the minimum horizontal distance from any public road or highway or from any work to be performed.
7. The execution of a payment and performance bond or cash deposit in the amount sufficient to secure the rehabilitation of the site and/or to guarantee the faithful performance of the work in accordance with the approval of the permit and all ordinances, laws and regulations of the [insert name of municipality] and all

plans and specifications filed with the application for the permit. Such bond shall be approved by the [insert name of municipality] Attorney as to form and manner of execution and sufficiency of sureties and shall run for the same term as the term of the approval. Default on such bond or deposit shall be declared by the [insert relevant approval agency] upon recommendation of the Code Enforcement Officer.

8. Such other considerations or requirements as the [insert relevant approval agency] in its discretion shall determine to be necessary for the protection of health, safety and welfare of the public.

§4.7 Mining and Excavation

- A. Objectives. To provide for the proper use of land and to mitigate the dangers caused by soil erosion, filling operations, excavations in the ground, sand and gravel excavation, the removal of trees, the stripping of soil and alteration to the natural contours of the earth as it presently exists in the conservation overlay district. To avoid the depletion of trees, soil and natural vegetative cover and the depreciation in value of and physical damage to properties adjacent to such dangers.
- B. Exemptions. The following properties and uses shall be exempt from the provisions of this section:
 1. Any excavation incidental to public highway construction or maintenance.
 2. Any removal of vegetation or soil (not amounting to an excavation), or planting of it, incidental to the business of operating a nursery, farm or sod farm.
 3. A single parcel of property located in a residential zoning district which is owned and occupied by the same family unit and which is incapable of being further subdivided into two or more valid conforming lots pursuant to the Zoning Law for the district in which the property is located, provided that the [insert relevant approval agency] determines that there is no existing or potential danger to adjoining properties by virtue of fill or excavation operations.
 4. Any excavating operation in which fill or other material is removed from the premises where a building permit has been duly issued, provided that the excavation is limited to not more than four feet below original ground level and not more than fifty yards of material is to be removed or as determined by the [insert relevant approval agency] in area and bulk to that strictly essential for and limited to the extent of the foundation, walls and basement of such building or for the construction of a wall, driveway, sidewalk, swimming pool, service connections or other structure or underground tank, and which is actually replaced by a basement foundation, wall, swimming pool, tank or other underground structure, and does not involve any change in the existing grade or contour.
 5. Any excavation or filling operation in connection with a subdivision or site plan which has been duly approved by the [insert relevant approval agency] and which makes specific provisions for grading, contouring and drainage in the manner

deemed by the [insert relevant approval agency] appropriate to carry out the purposes and intent of this chapter.

C. Findings

The [insert relevant approval agency] shall make the following findings before approving any development involving mining, excavation, filling, draining, or clearing:

1. Development does not create hazardous or dangerous conditions by creating pits, holes or hollows in the earth, by creating or leaving unprotected banks or ledges of exposed earth or by permitting or creating conditions, which cause the collection of water.
2. Usefulness of the land involved or any surrounding land is not impaired.
3. Development activity does not cause soil erosion, which depletes the land of vegetative cover and supply of organic material and results or tends to result in the washing of the soil, erosion, or interference with normal drainage.
4. Development activity does not divert or cause water to collect on the property of others, interfere with or overload any existing or planned drainage facilities of the [insert name of municipality], cause unnatural runoff or result in the collection of pools of water, with the possibility of health and safety hazards or the lowering of value of the property affected.
5. No cut trees, timber, debris, rocks, stones, junk, rubbish or other waste materials of any kind will be buried in any land or deposited on any lot or street except as approved by the [insert relevant approval agency]. If a building permit has been previously issued for premises, no certificate of occupancy shall be issued unless the conditions described above, which are not approved by the [insert relevant approval agency], have been remedied, nor shall any building permit or certificate of occupancy in the same subdivision be issued until the conditions described, unless approved, also have been remedied.
6. The work will not interfere with surface drainage, endanger any street, road, highway or municipal facility or interfere with support or drainage of adjoining properties.
7. The property can be restored and rehabilitated so that it will not cause soil erosion, drainage problems or create disturbance of land in conflict with the established purposes of this chapter.
8. The work or its result will not cause substantial traffic hazards, vibrations, noise, dust or sand.
9. The work or its result will be in conformity with the natural topography of land and will not change the established character of the conservation overlay district.
10. The period of time and the methods for the completion of the work are reasonable.
11. Accessibility of the property involved in the application to fire and police protection; access of light and air to the property and to adjoining properties; traffic conditions; transportation requirements and facilities; the general safety, health, peace, comfort and general welfare of the community-at-large; whether

the location and size of the proposed use, the nature and intensity of the operations involved, the size of the site in relation to the use, and the location of the site with respect to existing or future street giving access to it, parks and drainage systems shall be such that it will be in harmony with the location, nature and height of buildings, retaining walls and fences will not discourage the appropriate development and use of adjacent land, uses, structures and buildings or impair the value thereof.

12. Operations in connection with any use shall not be more objectionable to nearby properties by reason of noise, fumes, vibration or lights than would be the operations of any use permitted by right.
13. Provisions have been made to clean the area and streets used as truck routes on a regular basis.
14. The maximum slope and depth of any excavation or fill and the height and slope of any material moved or removed is in accordance with applicable performance standards. All excavations and all conformations resulting from grading or filling operations shall be drained so that water or pools gathering in the bottom of such excavations shall not be greater in depth than one foot.
15. No excavation shall be made nor shall any filling operation be conducted which results in the deposit of topsoil, earth, sand, gravel, rock, or other substance upon, or shall interfere with any natural watercourse on or the natural drainage of, the property, and at the termination of the permit, the premises shall be roughly graded and, if necessary, other provisions made of a permanent nature so that the natural drainage shall be fully restored.
16. There shall be no interference with existing drainage, nor shall the operation divert or cause water to collect on the property of others or interfere with or overload any existing or planned drainage facilities, endanger any road, street or highway within the limits of the [insert name of municipality], or produce or enlarge areas from which water will not drain, and provision shall be made for the temporary drainage of the surrounding area during the operation and for the restoration of permanent drainage to be effective upon completion of the operation.
17. All property shall be suitably graded and recovered with an adequate layer of topsoil, satisfactory to the [insert relevant approval agency], which shall contain no particle over two inches in diameter over the entire area of the property except that portion which had not been disturbed in construction and that portion covered by structures, construction in roads, driveways, walks, patios and swimming pools.
18. No certificate of occupancy shall be issued until the resspreading of topsoil and seeding of lawn has been completed, except that between October 1 and April 1 and between May 15 and August 15 the developer shall submit an agreement in writing, signed by the developer and property owner, with a copy of the [insert relevant approval agency], that resspreading of soil and seeding of lawn will be done during the immediately following planting season, and leave a cash escrow for performance, in such amount as shall be determined by the [insert relevant approval agency].

D. Conditions.

The [insert relevant approval agency] is authorized to impose, in granting approval, the following conditions:

1. The establishment of the permitted period of time for the completion of the work.
2. The establishment of hours and days of operation, taking into account the nature of the area in which the work is performed.
3. The construction of fencing and other safety precautions, including street signs and flagmen, specifying the height and type of fencing or precaution and the location. No excavation shall be made below the grade of surrounding property to a depth greater than four feet unless the excavation is properly guarded and protected by a substantial fence of proper height and strength which will prevent children and adults from climbing over such fence, and with gates, which gates shall be locked at all times when the property is not being worked on.
4. The provision of access roads or other adequate means of access or ingress.
5. Requirements for rehabilitation of the site when necessary.
6. The execution of a payment and performance bond or cash deposit in an amount sufficient to secure the rehabilitation of the site and/or to guarantee the faithful performance of the work in accordance with the approval of development and all ordinances, laws, and regulations of the [insert name of municipality]. Such bond shall be approved by the [insert name of relevant approval agency] as to form and manner of execution and sufficiency of sureties and shall run for the same term as the term of the permit and for a one-year maintenance period after completion of the work. Default on such bond or deposit shall be declared by the [insert name of municipality] upon recommendation of the [Code Enforcement Officer].

§4.8 Stormwater Management

A. Objectives

1. Prevent increases in the magnitude and frequency of stormwater runoff so as to prevent an increase in flood flows and in the hazards and costs associated with flooding.
2. Prevent decreases in groundwater recharge and stream base flow so as to maintain aquatic life, assimilative capacity and potential water supplies.
3. Maintain the integrity of stream geometry so as to sustain the hydrologic functions of streams.
4. Facilitate the removal of pollutants in stormwater runoff so as to perpetuate the natural biological functions of streams.
5. To the extent practical, secure multiple community benefits such as groundwater replenishment, open space protection and increased recreational opportunity through stormwater management planning.

B. Applicability.

The stormwater management control plan should be prepared and reviewed for all development when it is determined that stormwater runoff and/or erosion will have a significant effect on the environment.

1. It has been established that land clearing, land grading or earthmoving activities can have a significant effect on the environment, therefore, no applicant shall:
 - a. Initiate any land clearing, land grading or earthmoving activities without first preparing a stormwater management plan and obtaining approval of said plan from the [insert relevant approval agency].
 - b. Alter any drainage system without first preparing a stormwater plan and obtaining approval of said plan from the [insert relevant approval agency].

C. Exemptions.

The following activities are exempt from the stormwater management:

1. Agricultural activities, including household gardening.
2. Development of one (1) single-family or duplex residential structure not in an existing subdivision.
3. Any maintenance, alteration, use or improvement to an existing structure, which will not change the quality, rate, volume or location of surface water discharge or contribute to erosion and sedimentation.

D. Contents of Stormwater Management Control Plan

1. It is the responsibility of an applicant to include sufficient information in the stormwater management plan for the [insert name of municipality] to evaluate the environmental characteristics of the affected areas, the potential and predicted impacts of the proposed activity on community waters and the effectiveness and acceptability of those measures proposed by the applicant for reducing or mitigating adverse impacts.
2. The structure and content of the stormwater management control plan shall be as follows:
 - a. Background information.
 - 1) Project description.
 - i. Describe what is being proposed (i.e., residential lot subdivisions, planned unit development, commercial/retail development or industrial development).
 - ii. Describe project size (i.e., number of acres, number of dwelling units and other buildings and density).
 - iii. Describe other improvements which will be made on project site, including streets and roads, utilities (water, sewer, etc.), and give

- particular attention to acreage of land that will become paved and covered with buildings. Lawn acreage also should be specified.
- iv. Provide a location map including the watershed that may be impacted by the project, highways, roads and proximity of project to nearest city, village or hamlet, and to the nearest water body and other prominent features.
 - v. Provide a base map containing boundary lines of the project site, sub-catchments and contributory watersheds at a scale agreed upon by the municipality and developer.
 - vi. Provide an analysis of site limitations and development constraints by including such factors as slope, soil erodibility, depth to bedrock, depth to seasonal high water, soil percolation, etc., to facilitate evaluation of site suitability for proposed stormwater control facilities in relation to the overall development proposal.
 - vii. Provide a statement describing how this project will meet stormwater management objectives established by the [insert name of municipality].
 - viii. Provide a general description of the approaches, which will be taken to control stormwater runoff.
 - ix. Provide a statement indicating when project is to begin and the expected date of completion.
 - x. Provide a map and description of all conservation areas, conservation areas, wildlife habitats, easements, etc., to be protected. (These areas should be marked in the field.)
 - xi. Provide an analysis of potential impacts from the proposed development to natural resource features on site and off site such as streams, lakes, wetlands, water supplies, aquifers, etc.
- b. Existing (predevelopment) conditions.
- 1) Provide a map showing topography (contours) under existing conditions. On this same map, show drainage patterns, including ditches, culverts, permanent streams, intermittent/ephemeral streams or drainages, wetlands or other water bodies and existing roads. Indicate sizes of existing culverts. Delineate watershed and sub-watershed boundaries on the map.
 - 2) Provide a map showing existing land use, open space, public facilities, utility lines, water supply wells on site and predominant vegetation cover types (forested, brushland, grassland, cropland, pasture, etc.).
 - 3) Obtain soils survey information. Soils information should be obtained by conducting a site-specific soil survey.
 - 4) Where applicable, provide a map showing designated one-hundred-year floodplain boundaries in affected drainage basins in the conservation area overlay district including any available one-hundred-year flood elevations and floodways. Show culverts downstream of project and culvert size. Show existing easements for storm drains, sewers and other utilities. Show the extent of the drainage area served by a man-made stormwater drainage network if that network system is collecting runoff from outside of the natural drainage basin and is discharging into the basin of concern.

- 5) Provide hydrologic data describing rainfall characteristics. This should include:
 - i. Precipitation data for several return periods (i.e., the one-year, two-year, ten-year and one-hundred-year storms for a twenty-four-hour duration).
 - ii. Provide stream channel survey data by sub-catchment showing channel conditions including roughness and vegetation.
- c. Proposed future (development) conditions.
 - 1) Provide a map showing, by sub-catchment, the completed project, including lot layout, approximate location of buildings, streets and other paved surfaces, final contours, utility lines, water supply wells, individual sewage disposal systems and location and types of easements.
 - 2) Provide tabular information, by sub-catchment, showing the acres of impervious area created in the proposed development as well as the extent of lawn and areas where the land has been made more impervious than predevelopment conditions.
 - 3) By sub-catchment, show on a map changes to land surface, including areas of cuts and fills, changes in vegetative cover types and final contours. Indicate by sub-catchment, land clearing and earthmoving start-up and completion dates.
 - 4) Indicate construction schedule including estimated completion date(s) and proposed winter shutdowns.
 - 5) Comparison of predevelopment with post-development runoff.
 - i. Methodologies.
 - a) Describe or identify the methodology used to compare and evaluate pre- with post-development runoff conditions in terms of volumes, peak rates of runoff, routing and hydrographs.
 - b) Peak discharge rates and total runoff volumes from the project area for existing site conditions and post-development conditions for the two-year and ten-year, twenty-four-hour storm events should be calculated. The relevant variables used in this determination, such as curve number and time of concentration, should be included.
 - c) Downstream analysis of the one-hundred-year, twenty-four-hour event, including peak discharge rates, total runoff volumes and evaluation of impacts to receiving waters and/or wetlands, should be evaluated.
 - d) Storage volume and surface area requirements necessary to provide flood control for runoff generated during two-year, ten-year and one-hundred-year, twenty-four-hour storm events should be calculated.
 - e) Discharge provisions for the proposed control measures, including peak discharge rates, outlet design, discharge capacity for each stage, outlet channel design and a description of the point of discharge should be provided.

- f) Sufficient detail should be provided to show that the stormwater facility(ies) is/are capable of withstanding the discharge from the one-hundred-year storm event.
 - ii. Describe or identify the methodology used to compare and evaluate pre- with post-development pollutant loading. Contaminants to be compared include total suspended solids, total phosphorus, total nitrogen and biological oxygen demand and thermal pollution. Pollutant loading coefficients may be used.
 - a) Water quality treatment facilities should be designed for the one-year, twenty-four-hour storm event.
 - b) The necessary storage volumes shall be calculated and the proposed stormwater measure(s) shall be described in detail. The plans should provide sufficient detail of the water quality control measures to ensure that the relevant design criteria will be met.
 - c) Specific information may include surface area dimensions, depths, inlet designs, planting specifications for use of aquatic vegetation, percent solids removal expected, discharge rates and outlet design.
 - iii. Calculations.
 - a) State any assumptions used in making the calculations.
 - b) Provide assumptions and coefficient values used in the hydrologic calculations for making above comparisons. Evaluate the post-development effect of stormwater runoff on identified floodplains or designated flood hazard areas in the community.
 - c) Compare pollutant loading between before and after conditions. Provide computations.
- 6) Stormwater management.
 - a. Stormwater management facilities.
 - 1) Describe in a narrative and show on a map, by sub-catchment, proposed stormwater management facilities. A soil profile to at least one (1) foot below the stormwater management facility should be provided.
 - 2) Provide designs of proposed structural stormwater management facilities including peak flow attenuation and water quality management. Indicate which facilities will be used to attenuate peak flows, which will be used to enhance stormwater runoff quality and which facilities will serve a dual role. Identify the materials to be used in constructing these facilities
 - 3) Calculations for sizing stormwater facilities should be provided.
 - 4) Provide designs and calculations for siting and sizing such specialized measures and devices as filter strips, water quality inlets (oil/grit separator), forebays, etc., which will be used to remove sediment, oil-based products and other contaminants found in runoff.
 - 5) Provide an evaluation of the amount of treatment or level of pollutant reduction that can be expected from the proposed stormwater management facility(ies). Contaminants to be

considered in this evaluation include total suspended solids, total phosphorus, total nitrogen, biological oxygen demand and thermal pollution. Evaluation of the effectiveness of stormwater management practices can be based on reports on the effectiveness of comparable stormwater facilities at similar sites.

- 6) Provide information on the design provisions that address safety considerations (e.g., gentle slopes and benches in ponds) and accommodate maintenance needs including access to conduct maintenance operations.
- b. Stormwater conveyance system.
 - 1) Describe in a narrative and map, by sub-catchment, the stormwater conveyance (drainage) system. Indicate which segments of the drainage system are open channels and which segments are piped (culverts). Provide rationale and justification for installing piped segments.
 - 2) Provide plan view and cross-sectional designs of stormwater conveyance systems. Hydrologic calculations for siting and sizing the stormwater conveyance system should be provided. Identify materials to be used.
 - 3) Provide plans and designs and identify materials to be used for preventing erosion in channel sections of stormwater conveyance systems. Show how erosion at culvert inlets and outfalls will be prevented.
- c. Recreational and/or landscape features.
 - 1) Describe and illustrate any recreational or landscape features, which are to be factored into the stormwater management system to enhance the aesthetics of the facility(ies) and provide multiple use options.
 - 2) On a map prepared, show the location of recreational facilities.
 - 3) Provide landscaping sketches and designs for the stormwater management facilities.

E. Plan Review

1. The stormwater management plan shall not be approved unless it is consistent with the purposes and objectives of this section, except where a variance has been granted or where off-site management is approved.
2. Inspections. The applicant shall schedule the following inspections with the Code Enforcement Official:
 - a. Initial inspection: prior to approval of the stormwater management and erosion control plan.
 - b. Erosion control inspection: to ensure erosion control practices have been installed in accordance with the plan.
 - c. Bury inspection: prior to backfilling of any underground drainage or stormwater conveyance structures.

- d. Final inspection: when all work including construction of stormwater management facilities has been completed.
 3. The Code Enforcement Official shall inspect the work and either approve it or notify the applicant, in writing, in what respects there has been a failure to comply with the requirements of the approved stormwater management and erosion control plan. The applicant shall promptly correct any portion of the work, which does not comply, or the applicant will be subject to the bonding provisions and the penalty provisions of this law. The Code Enforcement Official may conduct random inspections to ensure effective control of erosion and sedimentation during all phases of construction.
- F. Off-site Stormwater Management Facilities. The [insert name of municipality] may allow stormwater runoff that is of unacceptable quality or which would be discharged in volumes or rates in excess of those otherwise allowed by this chapter to be discharged into stormwater management facilities off the site of development if all of the following conditions are met:
 1. It is not practicable to completely manage runoff on the site in a manner that meets the performance standards set forth above.
 2. The off site drainage facilities and channels leading to them are designed, constructed and maintained in accordance with the requirements of this section.
 3. Adverse environmental impacts on the site of development will be minimized.
 - a. Adequate provision is made for the sharing of construction and operating costs of the off site facilities. The applicant may be required to pay a portion of the cost of constructing the facilities as a condition to receiving approval of the drainage plan.
 - b. Use of regional off site stormwater management facilities does not eliminate the requirement that the first flush be captured and treated on site.
 - c. A request to use off site stormwater management facilities and all information related to the proposed off site facilities should be made a part of the stormwater management plan.
- G. Maintenance of Facilities.
 1. The [insert name of municipality] shall determine whether stormwater management facilities are to be maintained by the applicant, a homeowner's association or by the [insert name of municipality].
 - a. If maintenance is to be performed by a homeowner's association, the homeowner's association must be registered pursuant to § 352-e of the New York State General Business Law.
 - b. If maintained by an owner or homeowner's association, a maintenance plan containing a maintenance schedule shall be prepared by the applicant and/or homeowner's association for approval by the [insert name of municipality].
 - c. Stormwater management facilities maintained by an owner or homeowner's association shall have adequate easements to permit the Code Enforcement Official to inspect and, if necessary, to take corrective action should the owner

fail to properly maintain the system. Before taking corrective action, the [insert name of municipality] shall give the applicant or homeowner's association written notice of the nature of the existing defects. If the applicant or homeowner's association fails within thirty (30) days from the date of notice to commence corrective action or to appeal the matter to the [insert relevant approval agency], the [insert relevant approval agency] may take necessary corrective action, the cost of which shall be borne by the applicant or by the homeowner's association. If, in the event that the homeowner's association fails to pay for required corrective action, the [insert name of municipality] shall have a lien placed on the real property of members of the homeowner's association until payment is made.

2. Stormwater management facilities may be dedicated to the [insert name of municipality] for the purposes of maintenance by mutual consent and agreement of the applicant and [insert name of municipality] and shall be dedicated to the [insert name of municipality] when said facilities are determined to be appropriately a part of the [insert name of municipality] maintained stormwater management system.

§4.9 Timber Management.

- A. Objective. To promote the welfare of the people of the [insert name of municipality] by providing for regulation of the removal of trees in such a way as to protect and preserve the environment, roads, and quality of the community in general. Trees are a natural resource and an integral part of the natural landscape, providing soil erosion control, surface water flow barriers and scenic beauty, and fostering plant and wildlife species. The removal or harvest of trees is therefore of prime concern to the people of the [insert name of municipality] and shall not be permitted, except as hereinafter provided.
- B. Management Plan. To obtain approval for timber harvesting operations a management plan shall be submitted which contains the following information:
 1. A precise description of the operating area with an accurate topographic map of a scale of not less than eight inches to one mile, indicating:
 - a. Location of timber stands proposed for timber harvesting such that old growth stands, prior cut stands, small stands and hardwood stands are identified.
 - b. Location of truck roads, both existing and proposed.
 - c. Location of drainage structures.
 - d. Location of all buildings.
 - e. Location of firebreaks.
 - f. Location of all streams.

2. An operating plan describing the following information:
 - a. Estimated total volume of timber by species and diameter class and the basis of said estimate. If estimated by timber inventory, then specify date of inventory, type of inventory, and percent sample.
 - b. Type of timber stand in terms of age and crown density.
 - c. Method of tree selection for harvest and leave.
 - d. Slash disposal and cleanup plans.
 - e. Erosion control measures.
 - f. Fire prevention plan.
 - g. Name, address, and telephone number of logging operation and on-the-premises supervisor.
 - h. The desired haul route.
 - i. Name and address of applicant's forestry consultant.
 - j. Dates within which the timber harvest operations are to take place.
3. A statement of intent of the operation.
 - a. Timber harvest for sustained timer production.
 - b. Subdivision development.
 - c. Site development.
 - d. Recreation development.
 - e. Other.
4. Proposed area, drainage structures, and truck roads shall be suitably designated on the ground by flagging or other such means so that the area is easily determined.

C. Findings.

The [insert relevant approval agency] shall make the following findings before approving any timber harvesting or forest clearing activity:

1. To the greatest extent possible trees, shrubs and plants located within a floodplain, stream buffer, wetland, steep slope or critical habitat are retained.
2. Contiguous forests that connect large undeveloped or highly vegetated tracts of land are maintained.
3. Trees, shrubs, or plants determined to be rare, threatened, or endangered are protected.
4. To the extent possible, no new truck roads shall be created. If such roads must be created, they are laid out and constructed in such a manner that the general contours of the land are utilized, thus avoiding excessive cuts and fills. Roads shall be located so as to cause the minimum amount of erosion and stream contamination. Where possible, all roads shall be located so that fill material will not be deposited closer than fifty feet from the high water mark of any stream or natural watercourse except where truck roads cross streams.
5. No track laying or wheeled equipment shall operate, deposit or disturb soil within fifty feet of the high water mark of any stream.
6. No slash or debris shall be allowed to accumulate in any stream. No streams are used as a truck road or tractor road.

7. All road and skid road crossings of streams shall be provided with temporary or permanent drainage structures, which will adequately carry water under the road or skid road without the water being contaminated or polluted with soil or organic material.
8. Drainage structures shall be installed concurrently with road and skid road construction. They shall be of adequate size to carry anticipated peak flows.
9. Any fill deposited for truck road or tractor road crossings shall be removed from natural watercourses.
10. Tractor trails and skid trails shall be limited in number and width consistent with sound logging practices, and due diligence shall be exercised in skidding operations so as to prevent damage to leave trees, other vegetation and soil.
11. Landings shall be kept to a minimum in size and number consistent with sound logging practices. Landings shall not be located where their construction causes disturbance or depositing of soil within 100 feet of any stream or natural watercourse.
12. Measures shall be taken to control erosion.
13. No slash or debris greater than one inch in diameter shall be permitted within one hundred feet of any dwelling or public road.
14. The amount of trees to be harvested from any old growth, prior cut, small or hardwood stand, shall be in accordance with the following standards:
 - a. Old growth stands. Leave uncut and undamaged all trees measuring thirty inches or greater provided, however, no leave stand shall contain less than two trees.
 - b. Prior cut stands. Leave uncut and undamaged a well-distributed timber stand. Each leave stand area shall contain forty percent of those coniferous trees measuring twenty inches and above present prior to commencement of timber harvesting. No trees eighteen inches or less shall be cut. Leave trees shall be thrifty, vigorous, coniferous trees with well-formed full crowns.
 - c. Small stands. Leave uncut and undamaged a well-distributed timber stand. Each leave stand shall contain fifty percent of those coniferous trees measured twenty inches present prior to commencing of timber harvesting. No trees eighteen inches or less shall be cut. Leave trees shall be thrifty, vigorous, coniferous trees with well-formed full crowns.
 - d. Hardwood stands. All coniferous trees not damaged beyond recovery by the timber harvest must remain uncut.
15. Timber harvesting of any stand shall be limited to only one operation in any ten-year period of time; provided that, following the ten-year period, minimum stocking has been obtained.
16. Trees shall be felled to the fullest extent possible that topography, lean of tree, landings, utility lines, local obstructions and safety factors permit, in line skidding direction, away from roads, and with minimum damage to trees and reproduction. Trees located within a tree length of a stream shall be felled so that tree branches will not enter the stream.
17. Efforts are taken to reforest whenever possible.

§5.1 Approval Requirements and Standards

§5.2 General Approval Procedures

If not otherwise required for the approval of the development, the applicant shall submit the following information:

1. A location plan and boundary line survey of the property.
2. The location of the conservation area district boundaries.
3. The location of all existing and proposed buildings, structures, utility lines, sewers, water and storm drains on the property or within two hundred (200) feet of the proposed work site.
4. The location of all existing and proposed impervious surfaces such as driveways, sidewalks, etc., on the property or within two hundred (200) feet of the proposed work site.
5. Existing and proposed contour levels at one (1) foot intervals for the property, unless such property is located within a steep slopes area whereby contour levels may be shown at two (2) foot intervals.
6. The location and types of all existing and proposed vegetation and shrub masses, as well as all trees with a diameter of six (6) inches or more within and/or adjacent to the property.
7. The location of all existing and proposed drainage patterns, drainageways, swales, etc., within and/or adjacent to the property.
8. The location of critical wildlife habitat and a listing of wildlife species that utilize the habitat.
9. The location of any other critical natural resources that have been identified upon designation of the conservation overlay area.

§5.3 Development Approval on Land Located in Proximity to Wetlands, Water Bodies, and Watercourses

A. In addition to the information requested in §5.2, the application shall include:

1. A plat drawn to scale showing the wetland boundary as determined by a documented field survey, including the location of all existing and proposed watercourses, drainageways, and stormwater facilities. The plat shall also show the buffer area boundaries as determined in accordance with §3.3 (1)(D);
2. A description and map of the wetland area that will be affected by the proposed activity. This documentation must also include a map of the entire wetland, an assessment of the wetland's functional characteristics and water sources, and a description of the vegetation types and fish and wildlife habitat;
3. A description and map of soil types in the proposed development area and the locations and specifications for all proposed draining, filling, grading, dredging and vegetation removal, including the amounts and methods;

4. A study of any flood hazard, erosion hazard, or other natural hazards in the proposed development area and any prospective measures to reduce such hazards;
 5. Detailed Mitigation Plans if required;
 6. Description of how the proposal meets the approval criteria listed in subsection (B) below.
- B. Approval Criteria. In determining approval, the [insert relevant approval agency] shall consider the following:
1. Whether the proposed activity is water-dependent or requires access to the wetland as a central element of its basic design function, or is not water dependent but has no practicable alternative;
 2. Adverse impacts are minimized such that the wetland, water body or watercourse's functional characteristics, existing contour, vegetation, fish and wildlife resources, shoreline anchoring, flood storage, general hydrological conditions, and visual amenities are maintained;
 3. The potential for significant degradation of groundwater or surface-water quality;
 4. Provisions for replacement wetlands for any loss of existing wetland areas.
 5. Designated buffer areas are adequate to protect the wetland, water body or watercourse.

§5.4 Development Approval for Land Located in Aquifers

- A. In addition to the information required in §5.2, the application shall include:
1. A hydrologic analysis of the property. The purpose of the report is to demonstrate whether the proposed use will result in any degradation or contamination of ground water. Such analysis shall be prepared by a qualified hydrologist at the expense of the applicant. Such analysis shall include:
 - a. Identification of the nature and importance of the groundwater supply and recharge aspects of the individual property upon which the use is proposed.
 - b. Aquifer flow characteristics, including a delineation of the primary recharge area, a distribution of transmissivity and details of the hydrologic budget, including natural and man-made sources of recharge and withdrawal.
 - c. Description of the water table level.
 - d. Establishment of a ground-water protection plan which shall be implemented as part of the use. The plan, and its implementation at the time of establishment of the use, shall be such that it will mitigate any reasonable possibility of degradation or contamination of the ground water designated for protection. Particular design features to mitigate the water quality impacts of first-flush runoff from paved surfaces shall be included in the groundwater protection plan.
 - e. A showing that the use together with the implementation of the ground-water protection plan, will not result in a violation of the New York State Drinking

Water Standard (10 NYCRR 5). The location of measurement/testing is to be in the groundwater within the downgradient property line.

- f. An analysis of installation and/or extension of public or community sanitary sewer system as a mitigation measure and as an alternative to septic systems.

B. Approval Criteria. In determining approval, the [insert relevant approval agency] shall consider the following:

1. The type of use and the area in which the use is proposed.
2. The amount of vegetation that would be lost.
3. The degree of threat to ground water quality caused by the proposed use including the degree of soil compaction reducing the ability of the aquifer to store water.
4. The [insert relevant approval agency] may attach conditions to a permit to insure the protection of groundwater quality.

C. Prohibited Uses in Aquifer and Recharge Areas

1. The disposal, storage or treatment of hazardous material and solid or liquid waste material, except the storage of such hazardous material in sealed containers for retail sale or for normal household use.
2. The creation of manufacturing of any hazardous material.
3. Dry wells directly connected to any floor drain, garage drain, wash basin or sink.
4. Gasoline service and filling stations and automobile service and repair facilities.
5. Dry-cleaning and dyeing establishments and laundries that use cleaning solvents.
6. Photographic printing and processing labs.
7. Furniture stripping and refinishing establishments.
8. The storage of hydrocarbon products except those necessary for residential use in homes and vehicles provided that such products are stored in appropriate containers.
9. Disposal of hazardous material used in medical and dental office operations.
10. Disposal of septic or sewage sludge or ash.
11. Any storage of materials, which in the opinion of the [insert relevant approval agency], has the potential to contaminate or degrade ground-water resources.

§5.5 Development Approval for Land Located in Floodplains

A. In addition to the information required in §5.2, the application shall include:

1. The elevation, in relation to mean sea level, of the proposed lowest floor, including the basement or cellar of all structures.
2. The elevation, in relation to mean sea level, to which any nonresidential structure has been floodproofed.
3. A certificate from a licensed professional engineer or architect that the utility floodproofing will meet the floodproofing criteria.

4. A certificate from a licensed professional engineer or architect that the nonresidential floodproofed structure will meet the floodproofing criteria.
 5. A description of the extent to which any watercourse will be altered or relocated as a result of the proposed land use or development.
 6. Any such other information and technical data as the [insert relevant approval agency] may require.
- B. Approval Criteria. In determining approval, the [insert relevant approval agency] shall consider the following:
1. The type of use and are in which it is proposed.
 2. The amount of vegetation that would be lost.
 3. The degree of threat to loss of critical habitat and wildlife species.
 4. The alteration of the natural characteristics of the floodplain.
 5. Whether proposed building sites will be reasonably safe from flooding.
 6. Whether proposed development in an area of special flood hazard may result in physical damage to any other property (e.g., stream bank erosion and increased flood velocities).
 7. All necessary permits have been received from those governmental agencies from which approval is required by state or federal law.

§5.6 Development Approval for Land Located in Scenic Resources

- A. In addition to the information required in §5.2, the application shall include:
1. A grading plan showing all areas of cut and fill.
 2. A site plan delineating the locations of all structures.
 3. Sections, elevations, and perspectives showing the design of all proposed structures, including height from design grade.
 4. A landscape plan showing existing and proposed vegetation.
 5. Calculations showing how height restrictions are met.
 6. Material and/or paint descriptions for areas of structures visible in a scenic view.
 7. Color photographs showing the site from representative locations on the roadway of a scenic view.
- B. Approval Criteria. In determining approval, the [insert relevant approval agency] shall consider the following:
1. The scenic quality of the area is retained through the preservation of native vegetation and natural topography.
 2. Viewsheds provide the observer with the visual perspective of the area in terms of foreground, middle ground, and background.
 3. Views of prominent ridgelines that form the limits of scenic viewsheds are preserved.
 4. View windows through site development are maintained.

5. Siting of any structure is on a portion of the property where topography and existing vegetation will screen the development from view.
6. Use of nonreflective or low reflective building material and dark natural or earthtone colors.
7. Exterior lighting is shielded so that it is not highly visible from identified viewing areas. Shielded materials are composed of nonreflective, opaque materials.
8. Use of screening vegetation or earth berms to block and/or disrupt views of the development. The retaining of existing vegetation over other screening methods. Trees planted for screening purposes are coniferous thus providing winter screening. Proper maintenance and survival of any vegetation used for screening.
9. Proposed developments or land use activities are aligned, designed and sited to fit the natural topography and to take advantage of vegetation and land form screening, and to minimize visible grading or other modifications of landforms, vegetation cover, and natural characteristics.
10. Structure height remains below the surrounding forest canopy level thereby maintaining the tree line.
11. Siting and/or design is such that the silhouette of buildings and other structures remains below the skyline of bluffs or ridges as seen from identified viewing areas.
12. Paving and excavation is minimized to the greatest extent possible.
13. Features that are characteristic of the scenic area such as retaining fences, stone walls, rocks, and vegetation are preserved and maintained.

§5.7 Development Approval on Land Located on Steep Slopes

A. In addition to the information required in §5.2, the application shall include:

1. The location of the proposed area of disturbance and its relationship to property lines, easements, buildings, roads, walls and wetlands, if any, within fifty (50) feet of the boundaries of said area.
2. Proposed final contours at a maximum contour interval of two feet, locations of proposed structures, underground improvements, and proposed surface materials or treatment.
3. Existing topography of the entire watershed tributary to the proposed area of disturbance, presented at a scale of not more than one hundred (100) feet per inch. An insert map at a scale of not more than 2,000 feet per inch may be used to show the entire watershed, if needed. This map shall show existing and proposed controls and diversions of upland water.
4. A soils and slopes map indicating existing soils on the property, based on USDA Soil Conservation Service soils surveys. The depth of bedrock and depth to water table shall be identified in all areas of disturbance. Generalized slope areas for slopes 0 to 15 percent, 15 to 25 percent, and greater than 25 percent shall be delineated. This map shall be drawn on a topographic base map.
5. The details of any surface or subsurface drainage systems proposed to be installed including special erosion control measures designed to provide for proper

subsurface drainage, both during the performance of the work and after it completion.

6. Any special reports deemed necessary by the [insert relevant approval agency] to evaluate the application, including but not limited to detailed soils, geologic or hydrogeologic studies.
7. A written narrative explaining the nature of the proposal, including any future development anticipated for the property and whether alternative locations exist for the proposed activity.

B. Approval Criteria. In determining approval, the [insert relevant approval agency] shall consider the following:

1. The stable angle of repose of the soil classes found on the site have been used to determine the proper placement of structures and other development within the steep slope area.
2. The stability of soils will be maintained or increased to adequately support any construction thereon, or to support any landscaping, agricultural, or similar activities.
3. No proposed activity will cause erosion or slipping of soil, or cause sediment to be discharged into wetlands, watercourses or water bodies.
4. Plant life located on the slopes outside of the minimum area that needs to be disturbed for carrying on approved development shall not be destroyed. Plants or other acceptable ground cover shall be re-established in the disturbed area immediately upon completion of development activities to maintain the natural scenic characteristics of any steep slope.
5. Access down steep slopes shall be provided with ramp slopes no greater than 1:16 and side slopes no greater than 1:3 if not terraced or otherwise structurally stabilized. Disturbed non-roadway areas shall be stabilized and adequately drained.
6. Construction of erosion protection structures, particularly along the water side of eroding bluffs, shall provide protection of bluff features according to the following standards:
 - a. All erosion protection structures shall be designed and constructed according to general accepted engineering principles found in publications of the U.S. Soil Conservation Service.
 - b. The construction, modification or restoration of erosion protection structures shall not be likely to cause any measurable increase in erosion at the development site or other locations and prevent adverse effects to natural protective features, existing erosion protection structures, and natural resources such as significant fish and wildlife habitats.
7. Drainage of stormwater shall not cause erosion or siltation, contribute to slope failure, pollute groundwater, or cause damage to, or flooding of property. Drainage systems shall be designed and located to ensure slope stability.
8. Any grading, excavating or other soil disturbance conducted on a steep slope shall not direct surface water runoff over the receding edge during construction.

9. There is no reasonable alternative for the proposed regulated development on that portion of the site not containing steep slopes.

§5.8 Development Approval on Land Located in Woodlands and Forests

A. In addition to information requested in §5.2, the application shall include:

1. Boundaries of woodland areas, forests, and stands of trees.
2. Limits of proposed clearing for right of ways, utility easements, building sites, access roads and drainage areas.
3. Method of providing positive drainage in any proposed tree wells or acres where drainage patterns will be modified.
4. Proposed grade changes in or around treed areas.
5. Determine areas where tree preservation methods are to be intensified or where stands of trees will be left untouched.
6. Demonstrate that as much of the original site vegetation, including understory, brush and shrubs, will be preserved.

B. Approval Criteria. In determining approval, the [insert relevant approval agency] shall consider the following:

1. Preservation of all trees eight inches or greater. Trees less than eight inches are preserved if such trees have a significant aesthetic value or removal would excessively alter drainage or affect the stability of slopes.
2. Protective barriers are installed around trees and understory prior to the start of any development that may adversely affect vegetation.
3. Proposed development will not affect soil stability or rate of surface water runoff.
4. Existing drainage systems are maintained.
5. The natural characteristics of the wooded areas are preserved and maintained by ensuring that forest practice activities such as road and trail construction, timber harvesting, thinning, reforestation, fertilization, prevention and suppression of diseases and insects, salvage of trees and brush control will not have an adverse impact on wooded areas.

§5.9 Development Approval for Wildlife and Habitat

A. In addition to the information required in §5.2, the application shall include:

1. The location of the proposed site in relation to critical habitat for endangered, threatened, and regionally declining species.
2. The nature and intensity of the proposed use or activity.
3. A survey of all wildlife species found on property and the habitat they require to remain viable.
4. A description of the nature, density and intensity of the proposed use or activity in sufficient detail to allow analysis of such land use change upon identified wildlife habitat.

5. An analysis of the effect of the proposed use or activity upon significant fish and wildlife species and their habitats.
6. A plan that explains how the applicant will avoid, minimize or mitigate adverse impacts to fish and/or wildlife habitats created by the proposed use or activity. These mitigation measures may include but are not limited to:
 - a. Establishment of buffer areas;
 - b. Preservation of critical habitat;
 - c. Limitation of access to habitat areas;
 - d. Seasonal restriction of construction activities;
 - e. Clustering of development and preservation of open spaces;
 - f. Signs marking habitats and habitat buffer areas;
 - g. Conservation easements.

B. Approval Criteria. In determining approval, the [insert relevant approval agency] shall consider the following:

1. Buffer areas are designated and maintained to avoid adverse impacts on wildlife or wildlife habitat as a result of the proposed activity.
2. Wildlife corridors will be preserved and maintained to ensure that wildlife migration patterns are not interrupted.
3. Ecological processes will be maintained to the greatest extent possible by preserving and maintaining landscape linkages.
4. Any adverse impacts to wildlife or wildlife habitat will be minimized or mitigated.

§6.1 Additional Considerations and Findings

A. Consideration. In granting or denying approval of any development the [insert relevant approval agency] shall consider all relevant facts and circumstances including but not limited to the following:

1. The environmental impact of the proposed action.
2. The alternatives to the proposed action, including the availability of preferable alternative locations on the subject parcel or any other parcel under the control of the applicant.
3. The ability or unsuitability of the proposed activity to the area for which it is proposed.
4. The effect of the proposed activity with reference to the protection or enhancement of the functions of conservation features and the benefits these features provide.
5. The availability of further technical improvements, safeguards or other mitigation measures that could feasibly be added to the plan or action.
6. The possibility of further avoiding reduction of the critical area's natural capacity to support desirable biological life, prevent flooding, supply water, control sedimentation and/or prevent erosion, assimilates wastes, facilitate drainage and provide recreation and open space.

B. Findings

Approval will be issued by the [insert relevant approval agency] pursuant to this chapter only if the applicant demonstrates that:

1. The proposed development is consistent with the purposes and objectives set forth in this chapter to preserve, protect and conserve conservation features and their ecological connections by preventing to the maximum extent practicable the degradation and destruction of these features.
2. The proposed regulated activity is compatible with public health and welfare.
3. The proposed activity cannot practicably be relocated on the site so as to eliminate or reduce the impacts on conservation areas.

§6.2 Approval Conditions

- A. Approval issued pursuant to this chapter may contain conditions designed to assure the preservation and protection of affected conservation areas, and compliance with the objectives of this law.
- B. Approval issued pursuant to this chapter shall contain conditions including the following:
 1. Work conducted under approval shall be open to inspection at any time, including weekends and holidays, by the Code Enforcement Officer.
 2. Approval shall expire on a specified date.
 3. The applicant shall notify the Code Enforcement Officer of the date on which the work is to begin, at least five days in advance of such date.
- C. Conditions may include but shall not be limited to the following:
 1. Limitations on the total portion of any lot or the portion of the conservation characteristic on the lot than may be adversely impacted.
 2. Setbacks for structures, filling, grading, or otherwise modifying a conservation area.
 3. Modifications to project design to ensure continued protection of an area or specific feature.
 4. Replanting of vegetation or other necessary restoration activities to replace damaged or destroyed areas.
 5. Other alterations to the proposed development necessary to protect the natural features of the conservation area.
- D. Performance Guarantees
 1. The [insert relevant approval agency] may require that, prior to commencement of work under approval issued pursuant to this chapter, the applicant shall post a

performance guarantee in an amount and with surety and conditions sufficient to secure compliance with the conditions and limitations set forth in the permit. The particular amount and the conditions of the performance guarantee shall be consistent with the purposes of this chapter. The performance guarantee shall remain in effect until the Code Enforcement Officer certifies in writing that the work has been completed in compliance with the terms of the approval and the performance guarantee is released by the approval [insert relevant approval agency], or until a substitute performance guarantee is provided. In the event of a breach of any condition of any permit, the [insert relevant approval agency] may act to obtain and make appropriate use of the proceeds of the performance guarantee.

2. The [insert relevant approval agency] shall set forth in writing in the file it keeps regarding an application its findings and reasons for imposing a performance guarantee pursuant to this section.

§7.1 Penalties for Offenses

A. Administrative Sanctions

1. Damages. Any person who undertakes any activity regulated by this chapter without approval issued hereunder, or who violates, disobeys or disregards any provision of this chapter shall be liable to the [insert name of municipality] for civil damages caused by such violation. Each consecutive day of the violation will be considered a separate offense. Such civil damages may be recovered in an action brought by the municipality at the request and in the name of the [insert relevant approval agency] in any court of competent jurisdiction.
2. Restitution. The [insert relevant approval agency] shall have the authority to direct the violator to restore the affected conservation area to its condition prior to violation, insofar as that is possible, within a reasonable time and under the supervision of the Code Enforcement Officer. Further, the [insert relevant approval agency] shall have the authority to require an adequate performance guarantee in a form and amount deemed necessary by the [insert relevant approval agency] to ensure the restitution of the affected conservation area.
3. Stop-work order; revocation of permit. In the event that any person having approval issued pursuant to this chapter fails to comply with any of the conditions or limitations set forth in the approval, exceeds the scope of the activity as set forth in the application or operates so as to be materially detrimental to the public welfare or injurious to a conservation area, the [insert relevant approval agency] may suspend or revoke the approval as follows:
 - a. Suspension of approval shall be by a written stop-work order issued by the code enforcement officer and delivered to the permittee. The stop-work order shall be effective immediately, shall state the specific violations cited and shall state the conditions under which work may be resumed. A stop-work order shall have the effect of suspending all authorizations and permits granted by the [insert relevant approval agency]. The stop-work order shall remain in effect until the [insert relevant approval agency] is satisfied that the

applicant has complied with all terms of approval or until a final determination is made by the [insert relevant approval agency] as provided in Subsection A(3)(b) immediately below.

b. Public hearing; notice; determination.

- (1) No site development approval shall be permanently suspended or revoked until the [insert relevant approval agency] holds a public hearing.

Written notice of such hearing shall be served on the permittee, either personally or by registered mail, and shall state:

- (a) The grounds for complaint or reasons for suspension or revocation.
(b) The time and place of the hearing to be held.

- (2) Such notice shall be served on the applicant at least one week prior to the date set for the public hearing unless the stop-work order is issued for a violation occurring less than one week before the regularly scheduled public meeting of the [insert relevant approval agency]. At such hearing, the applicant shall be given an opportunity to be heard and may call witnesses and present evidence on his behalf. At the conclusion of the hearing, the [insert relevant approval agency] shall determine whether approval shall be reinstated, suspended or revoked.

- B. Other Sanctions. Any person convicted of having violated or disobeyed any provision hereof, any order of the [insert relevant approval agency] or any condition duly imposed in development approval granted pursuant to this chapter, for the first offense shall be punished by a fine of not less than \$1,000 per day of offense. Each subsequent offense shall be punishable by a fine of not less than \$2,000 per day. Each consecutive day of the violation shall be considered a separate offense.

§8.1 Enforcement

The [insert name of municipality] is specifically empowered to seek injunctive relief restraining any violation or threatened violation of any provisions hereof and/or to compel the restoration of the affected conservation area to its condition prior to the violation of the provisions of this law.

§9.1 Appeals

Any final determination, decision or order of the [insert relevant approval agency] may be appealed by means of the procedure specified for zoning matters as set forth in the zoning chapter.

§10.1 Inspection

- A. Lands within or adjacent to an identified Conservation Area will be inspected by the Code Enforcement Officer when:

1. A subdivision or land development plan is submitted.
2. A building permit is requested.
3. A change or resumption of nonconforming use is proposed.

- B. The area may also be inspected periodically by the Code Enforcement Officer for compliance with an approved restoration plan, excessive or potentially problematic erosion, hazardous trees, or at any time when the presence of an unauthorized activity or structure is brought to the attention of municipal officials.

§11.1 Conservation Area Management

A. Management Plan

Within any identified conservation area district, no construction, development, use, activity, or encroachment shall be permitted unless the effects of such development are accompanied by the submission of an approved Conservation Area Management Plan.

1. The landowner or developer shall submit to the [insert relevant approval agency] a Conservation Area Management Plan prepared by an ecologist, landscape architect, engineer, or other qualified professional, which fully evaluates the effects of any proposed uses on the Conservation Area. The management plan shall identify the existing conditions, all proposed activities, and all proposed management techniques, including any measures necessary to offset disturbances.

§12.1 General Provisions

In order to carry out the proposed provisions hereof, and in addition to the powers specified elsewhere in this chapter, the following general provisions shall apply:

- A. Indemnification. The property owner and applicant, by making an application for approval, shall indemnify and hold the [insert name of municipality] harmless against any damage or injury that may be caused by or arise out of any entry onto the subject property in connection with the processing of the application, during proposed work, or within one year after completion of the work.
- B. Conflicts. Wherever this chapter is inconsistent with any other law of the [insert name of municipality], whichever law imposes the more stringent restriction shall prevail.
- C. Severability. The provisions and sections of this chapter shall be deemed to be severable, and the invalidity of any portion of this chapter by a court of competent jurisdiction shall not affect the validity of the remainder of this chapter.
- D. Cease and Desist Order. The Code Enforcement Officer is authorized to issue a cease and desist order to any landowner, contractor or their agent who is engaged in any activity on the land that may have a significant impact on any critical resources designated in this chapter. When such an order has been issued, the landowner must not resume the activity until approval has been issued by the [insert relevant approval

agency] which shall cause the [insert relevant approval agency] to make all the findings, apply all standards and consider all relevant approval criteria as contained in this chapter.

- E. Waiver. The [insert relevant approval agency] charged with the implementation of these provisions may waive them when reasonable with regard to any development proposal submitted for its approval or any permit requested to which these standards are applicable. The applicant must demonstrate, by presenting clear and convincing evidence, that the application of the particular standard or standards requested to be waived will cause a unique and serious hardship to the applicant. Before such a waiver may be granted, the [insert relevant approval agency] must find that the waiver it is granting is the minimum needed to relieve the demonstrated hardship and that the natural resources protected by these standards will be impacted as minimally as possible by the waiver.
- F. Effective date. This chapter shall become effective immediately upon publishing and posting as required by law.

