

# Charlotte Conservation Commission

February 7, 2023

To: Chair Pughe and Members of the Charlotte Planning Commission (PC)

RE: Proposed LUR Amendments from the CCC

In January, we sent you a letter sharing our goals to help Charlotte better protect its remaining forests and meet the conservation vision of the Town Plan. We also noted that Charlotte needs new or stronger regulations to avoid the negative impacts of development on natural resources.

To achieve these goals, we drafted a set of proposed amendments (sections 2-4 below). We hope these proposed amendments offer a good starting point for review and revision with the PC.

In this document, you will find the following sections:

1. Rationale
2. Ideas
3. Standards
4. Definitions
5. Resources

In the Rationale section, we explain why we think the suggested changes to the Land Use Regulations (LURs) are needed.

In the Ideas, Standards, and Definitions sections, we include a table in each section with our proposed amendments. Each table has a column with references to the Town Plan. We use red text and “~~strikethrough~~” to indicate how we are proposing to change the existing language in the LURs. We did not use special formatting for newly proposed amendments.

In the Resources section, we list the materials that we consulted to draft these amendments. We highly recommend that the Town, PC, and interested community members refer to these materials throughout the LUR revision process.

Please let us know if you would like us to join a meeting or working group session to further discuss this set of proposed amendments. We look forward to hearing your thoughts.

—The Charlotte Conservation Commission

# 1. Rationale

## 1. Forests are an integral part of Vermont and essential for the health of our wildlife populations.

- Forests are so much more than just a cluster of trees. They are complex ecosystems that support a myriad of plant and animal species and are fundamental for conserving biodiversity.
- Currently, our forests are still home to a variety of wildlife including deer, bobcat, coyote, and fox that typically require blocks of 100+ acres.
- Some of Vermont's nine bat species rely heavily on forest habitat. The greatly endangered Indiana bat prefers mature shagbark hickory as maternity roost trees, a species commonly found in our clayplain forests.
- For all these species, smaller forest patches as well as riparian areas often serve as stepping stones to connect to larger habitat blocks and beyond our town borders.

## 2. Forests provide a wide range of ecosystem goods and services.

- In addition to providing wildlife habitat, forests maintain air quality, water quality, and flood resilience.
- They help mitigate climate change through carbon sequestration and storage.
- They provide aesthetic values that directly connect to property value and thus wealth and tax revenue.
- Forests support recreation, education, research, tourism, and the economy.
- Continuous forests of 25+ acres can support the working landscape through the Current Use program.

## 3. Forests are disappearing due to development pressure and other natural and anthropogenic stressors.

- Vermont is now losing forest cover for the first time since the mid-1800s (1,500 acres per year) due mostly to suburban and rural residential sprawl.
- Habitat loss and fragmentation are considered two of the major factors driving the loss of biological diversity and degradation of ecosystem goods and services.
- That climate change is upon us, is no longer in doubt. Since 1900, average annual precipitation in Vermont has increased 21%. Intact forests absorb much of this excess rainfall, which is likely to increase. Shifting climate zones also impact wildlife behavior, reproduction, migration, foraging, and survival.
- Forests are under stress from pests and diseases, such as emerald ash borer, hemlock wooly adelgid, and spongy moth (formerly "gypsy" moth).
- Large, intact forests are more resilient to stress than small or fragmented forests.
- Unfortunately, in Charlotte, forest blocks are sparse and heavily fragmented. The largest interior forest blocks in Charlotte encompass only a few hundred acres each. Places like Mount Philo State Park and Pease Mountain Natural Area have protected cores, but the surrounding parcels that make up the entire forest blocks are privately owned. Examining these blocks from above reveals how heavily parcelized and fragmented they already are. The same holds true for most of the remaining privately-owned forest blocks.

## 4. Although several LURs aim to protect forests, they need to be strengthened.

- Several LURs aim to protect forests by guiding lot and building envelope placement outside of forest habitat (as an Area of High Public Value).

- However, there are several recent examples where developments have added to the deforestation of formerly untouched forest blocks.
- 5. We need to work together and act before we lose our forests.**
- In 2019, the Charlotte Town Plan was amended to include Act 171, which enables towns to create regulations for the protection of forest blocks and habitat connectors.
- Per Act 171, “After January 1, 2018, municipalities seeking to have their plans approved by their Regional Planning Commission must include additional information on the future land use map and language that identifies state, regional or locally significant forest blocks and habitat connectors. The plan may also include specific policies on how the community will take steps to reduce forest fragmentation, enhance forest health, and support essential ecological functions.”
- In this document, we recommend a set of proposed amendments to help better protect Charlotte’s forests and natural resources.

“Let’s start indoors. Let’s start by imagining a fine Persian carpet and a hunting knife. The carpet is twelve feet by eighteen, say. That gives us 216 square feet of continuous woven material. Is the knife razor-sharp? If not, we hone it. We set about cutting the carpet into thirty-six equal pieces, each once a rectangle, two feet by three. Never mind the hardwood floor. The severing fibers release small tweaky noises, like the muted yelps of outraged Persian weavers. Never mind the weavers. When we're finished cutting, we measure the individual pieces, total them up -- and find that, lo, there's still nearly 216 square feet of recognizably carpet-like stuff. But what does it amount to? Have we got thirty-six nice Persian throw rugs? No. All we're left with is three dozen ragged fragments, each one worthless and commencing to come apart.”

- David Quammen, *The Song of the Dodo* (1996)

## 2. Ideas

The following table includes ideas for changes to the LURs. We have not yet proposed specific language and would like to work with the PC to determine next steps.

<b>Chapter, Section, Page #</b>	<b>Idea</b>	<b>Town Plan Reference</b>
2.8, p. 18 (proposed)	What is the best way for the Town to add “Forest Habitat” that is identified on the Charlotte Significant Wildlife Habitat Map to the Conservation District (CON)?	1-11, Natural Resource Policies #2; 1-5 to 1-6 Land Use Strategy #9; 1-20, Key Planning Consideration #8

### 3. Standards

Chapter, Section, Page #	Proposed Amendment	Town Plan Reference
2.5(F)5, p. 13 (proposed)	<p><b>Table 2.5 – Rural District (RUR)</b>  <b>(F) District Standards:</b>            (5) New permitted and conditional uses shall include designated building envelopes within which all structures and parking areas shall be located. The size and shape of each building envelope shall be established in accordance with these regulations, including all applicable standards under this chapter and the district. The Zoning Administrator may also require the identification of specific building footprints if such information is needed to determine conformance with these regulations. Building envelopes must be located, sited and configured so as to exclude Areas of High Public Value. In the event that no other land in the parcel is suitable for development, building envelopes must be designed to minimize encroachments into these areas and to minimize adverse impacts.</p>	1-4 to 1-5, Land Use Policies #8c
3.2, D(1)c, p. 23	Roads and driveways <del>should</del> <b>must</b> be located to avoid fragmentation of and/or adverse impacts to areas of high public value listed in Table 7.1. Additionally, to the extent feasible, roads <del>should</del> <b>must</b> follow existing linear features such as utility corridors, tree lines, hedgerows and fence lines.	1-48, Key Planning Considerations #10
3.15(A), p. 34	<p><b>Setbacks from Streams.</b> To prevent surface runoff and accelerated soil erosion, and to protect water quality and wildlife habitat, all structures and wastewater disposal systems (septic tanks, leach fields) and other impervious surfaces shall be set back a minimum of <del>100</del> <b>150</b> feet from all named streams, and a minimum of <del>50</del> <b>100</b> feet from all unnamed streams as depicted on the zoning map, <b>State of Vermont maps</b>, or as identified through field investigation, and as measured horizontally from the top of the nearest stream bank. Where the standards of this section differ from other applicable standards under the Flood Hazard Area Overlay District, the more restrictive shall apply. In addition, all structures and wastewater disposal systems shall be set back a minimum of <del>150</del> <b>200</b> feet from the top of the nearest stream bank of the following:</p> <p>(1) The tributary of the LaPlatte River which originates near the intersection of Bingham Brook Road and</p>	1-11, Natural Resource Policies #1, #5, & #6; 1-14, Natural Resources Strategies #5

Chapter, Section, Page #	Proposed Amendment	Town Plan Reference
	<p>Spear Street Extension and flows generally north through a large wetland adjacent to the microwave tower east of the Spear Street Extension.</p> <p>(2) The stream which originates in a wetland parallel to and west of Bean Road, flows into and out of a wetland near the intersection of Bean Road and Prindle Road, and then generally south to its intersection with Lewis Creek.</p>	
3.15(C), p. 35	<p><b>Stream-bank Buffers.</b> In order to protect water quality and riparian habitat, and to prevent surface runoff and accelerated soil erosion, an undisturbed, naturally vegetated buffer shall be maintained along streams and rivers. The buffer will be a minimum of <del>25</del>50 feet in width and will be measured from the top of the streambank or from the regular high water mark in instances where no stream bank is discernable.</p>	1-11, Natural Resource Policies #1, #5, & #7; 1-12, Natural Resources Strategies #1
3.15, between E-F, p. 35 (proposed)	<p><b>Wetland Buffers.</b></p> <ul style="list-style-type: none"> <li>● To protect wetland functions and values, all development shall be set back: <ul style="list-style-type: none"> <li>○ At least two hundred (200) feet in horizontal distance from the boundary of all Class I wetlands.</li> <li>○ At least one hundred (100) feet in horizontal distance from the boundary of all Class II wetlands.</li> <li>○ At least fifty (50) feet in horizontal distance from the boundary of all Class III wetlands areas 5,000 square feet or larger in size.</li> </ul> </li> </ul>	1-11, Natural Resource Policies #1; 1-12, Natural Resources Strategies #1
Between 3.15 and 3.16, p. 35 (proposed)	<p><b>Linkage Habitats</b></p> <p>(A) Development impacting a Linkage Habitat – as identified on maps and within the text of the Charlotte Town Plan (as amended), State of Vermont maps, or as field delineated by a qualified professional – if not being reviewed as a subdivision or Planned Residential or Unit Development under the provisions of Chapters 6, 7 and 8, must be subject to conditional use review by the Development Review Board under Section 5.4 and the following provisions:</p> <p>(1) Minimize disruption and fragmentation of the identified Linkage Habitat. Ensure that the</p>	1-11, Natural Resource Policies #2 and #3

Chapter, Section, Page #	Proposed Amendment	Town Plan Reference
	<p>development will not prevent the continued use by wildlife species dependent on the Linkage Habitat to travel between areas of wildlife habitat. The Development Review Board may require an ecological study by a qualified professional to identify species using the Linkage Habitat.</p> <p>(2) Prohibit Barriers. Prohibit any placement of fences, walls, or substantial changes in grade that would disrupt the movement of wildlife within the Linkage Habitat.</p> <p>(3) Mitigate impacts. If the requirements of (1) above cannot be met, then the applicant must mitigate impacts by restoring or enhancing woody vegetation cover in portions of the identified Linkage Habitat that have been previously disturbed by clearing or similar disturbance. Restoration and enhancement proposals must be approved by the Development Review Board, and the restored or enhanced acreage must be included in an open space agreement.</p>	
After 3.17 (proposed), p. 36	<p><b>Avoidance, Minimization, and Mitigation Requirements</b></p> <p>(A) When a provision under these regulations specifies that an applicant shall avoid, minimize, and/or mitigate impacts or effects, the following steps must be taken in order:</p> <p>(1) Avoid. The applicant must demonstrate that there is no other practicable alternative on the parcel to be developed.</p> <p>(2) Minimize. The applicant must use project design to reduce impacts to the greatest extent possible.</p> <p>(3) Mitigate. The applicant must offset potential impacts if they are unavoidable through minimization or restoration.</p>	1-4, Land Use Policy #8
7.2, p. 81	<p><b>Development Suitability.</b> All land to be subdivided shall be suitable for the intended use and proposed density of development, and shall not result in undue adverse impacts to public health and safety, public facilities and infrastructure, or the character of the surrounding area. Moreover, to the extent feasible, land development <del>should</del> <b>must</b> not have an undue adverse impact on Areas of High Public Value (see Table 7.1). During the review process, the Development Review</p>	1-4, Land Use Policy #8

Chapter, Section, Page #	Proposed Amendment	Town Plan Reference
	Board will identify specific characteristics of each subject parcel which may be of concern, and will prioritize those resources the Development Review Board considers most important to be addressed in the application.	
7.2, C(2), p. 82	The Development Review Board shall ensure that the parcel <del>may</del> accommodates anticipated development without undue adverse impact to public health and safety, and <del>to</del> avoids (and where avoidance is not possible minimizes or mitigates) <del>undue</del> adverse impacts to Areas with High Public Value by the parcelization, fragmentation, isolation, or destruction of such areas. To achieve this, the Development Review Board may require different lot sizes than proposed by the applicant based upon site limitations and the presence of physical and natural features., <del>and to</del>	1-4, Land Use Policy #8
7.3, (D)4, p. 83	Areas of High Public Value <del>should</del> must be identified and <del>should be</del> considered for inclusion as designated open space on the subdivision plat. Buffer areas, management plans, conservation easements, restrictions on further subdivision or comparable site protection mechanisms and mitigation measures may be required to ensure the long-term conservation of these areas.	1-4, Land Use Policy #8
7.3(D)1, p. 83	Building envelopes, <del>to the extent feasible, shall</del> must be located, sited and configured so as <del>not to create any undue adverse impacts on</del> to exclude Areas of High Public Value. In the event that no other land in the parcel to be subdivided is suitable for development, building envelopes <del>shall</del> must be designed to minimize encroachments into these areas and to minimize <del>undue</del> adverse impacts.	1-4, Land Use Policy #8
7.5, C(2), p. 84	Utility corridors shall, to the extent feasible, be shared with other utility and/or transportation corridors, and be located to minimize site disturbance, fragmentation of Areas of High Public Value, and undue adverse impacts to significant natural, cultural and scenic features by the destruction of such areas, and to public health.	1-4, Land Use Policy #8
8.3, C(1), p. 92	<b>Conservation Projects.</b> At the request of the applicant, or as otherwise required under Section 8.2(B), the proposed PRD shall be designed in a manner that maximizes the reduction of lot sizes and modification of setbacks and other dimensional	1-4, Land Use Policy #8; 1-10, Key Planning Considerations



Chapter, Section, Page #	Proposed Amendment	Town Plan Reference
	<p>standards to minimize <del>undue</del> adverse impacts to, and fragmentation of, Areas with High Public Value. The conservation subdivision design process described in Table 6.3 shall be followed by the applicant, and modifications to standards shall be allowed by the Board to the extent that such modifications better achieve the standards set forth under Chapter 7. A minimum of 50% of the lot(s) shall be designated as open space in accordance with Section 8.6 for minor subdivisions. A minimum of 80% of the lot(s) shall be designated as open space in accordance with Section 8.6 for major subdivisions.</p>	#3

## 4. Definitions

Chapter, Section, Page #	Proposed Amendment	Town Plan Reference
10.2, p. 120 (proposed)	<b>Fragmentation:</b> The division or conversion of tracts of wildlife habitat into smaller pieces leaving remnant patches of wildlife habitat that vary in size and isolation separated by developed or, otherwise non-forested, lands. The reduction in size of wildlife habitat as a result of fragmentation can disrupt wildlife corridors and render core habitat and other habitats unsuitable for certain species of plants and animals.	1-48, Key Planning Considerations #10
10.2, p. 121	<b>High Public Value:</b> Areas of land containing the resources listed in Table 7.1 of these regulations. Such areas are as identified on town resource maps and databases, <b>State of Vermont maps</b> , or may be field delineated and/or evaluated by a qualified professional during a land development or subdivision application review process.	1-14, Natural Resources Strategies #5
10.2, p. 127 (proposed)	<b>Practicable:</b> Technologically possible, able to be put into practice, and economically viable, regardless of whether the applicant owns or controls alternative locations at the time of the application.	–
10.2, p. 133	<b>Wildlife Habitat:</b> Areas identified as wildlife habitat on maps and within the text of the Charlotte Town Plan (as amended), <b>State of Vermont maps</b> , or as field delineated by a qualified professional. <b>This includes but is not limited to: Forest Habitat, Persistent Shrubland Habitat, Aquatic Habitat, and Linkage Habitat and Connecting Corridors.</b>	1-14, Natural Resources Strategies #5; 1-4, Land Use Policy #8

## 5. Resources

### 1. Act 171 Guidance

- a. Vermont Agency of Natural Resources (VT ANR)
- b. <https://anr.vermont.gov/sites/anr/files/co/planning/documents/guidance/Act171Guidance.pdf>
- c. Discusses how to address protecting forest and wildlife resources in land use regulations

### 2. Conserving Vermont's Natural Heritage

- a. Vermont Agency of Natural Resources (VT ANR)
- b. [https://vtfishandwildlife.com/sites/fishandwildlife/files/documents/Get%20Involved/Partner%20in%20Conservation/Conserving\\_Vermont's\\_Natural\\_Heritage.pdf](https://vtfishandwildlife.com/sites/fishandwildlife/files/documents/Get%20Involved/Partner%20in%20Conservation/Conserving_Vermont's_Natural_Heritage.pdf)
- c. A guide to community-based planning for the conservation of Vermont's fish, wildlife, and biological diversity

### 3. Mapping Vermont's Natural Heritage

- a. Vermont Agency of Natural Resources (VT ANR)
- b. <https://vtfishandwildlife.com/sites/fishandwildlife/files/documents/Get%20Involved/Partner%20in%20Conservation/MVNH-web.pdf>
- c. A mapping and conservation guide for municipal and regional planners in Vermont

### 4. Community Strategies for Vermont's Forests and Wildlife

- a. Vermont Natural Resources Council (VNRC)
- b. <https://vnrc.org/wp-content/uploads/2019/08/VNRC-Forestland-Conservation-10-1-links.pdf>
- c. Guide with regulatory and non-regulatory options for maintaining the integrity of forests and keeping large blocks connected and intact for a range of forest functions and wildlife

### 5. Climate Change and Land Use 2022

- a. Chittenden County Regional Planning Commission (CCRPC)
- b. [https://www.ccrpcvt.org/wp-content/uploads/2022/04/Climate-Change-and-Land-Use\\_Standard-Resolution\\_20220427.pdf](https://www.ccrpcvt.org/wp-content/uploads/2022/04/Climate-Change-and-Land-Use_Standard-Resolution_20220427.pdf)
- c. Discusses how to address climate change in land use regulations

### 6. Low Impact Development

- a. Vermont Agency of Natural Resources (VT ANR)
- b. [https://dec.vermont.gov/sites/dec/files/wsm/erp/docs/sw\\_gi\\_1.0\\_LID\\_series.pdf](https://dec.vermont.gov/sites/dec/files/wsm/erp/docs/sw_gi_1.0_LID_series.pdf)
- c. Low Impact Development (LID) is defined as an innovative land planning and design approach which seeks to maintain a site's pre-development ecological and hydrological function through the protection enhancement, or mimicry of natural processes

### 7. Forest Block Planning

- a. Two Rivers-Ottawaquechee Regional Commission (TRORC)
- b. <https://www.trorc.org/wp-content/uploads/2022/12/Forest-Block-Planning-Forest-Blocks-Subdivisions-and-Rural-density.pdf>
- c. A comprehensive PowerPoint presentation on forest blocks, subdivisions, and rural density