



City of Burlington, VT
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www.burlingtonvt.gov/plan

Burlington Planning Commission

Ordinance Committee

645 Pine Street, Rm. 102 & via Zoom

Thursday, January 6, 2022 @ 5:15 PM

Zoom: <https://us02web.zoom.us/j/85126386528?pwd=U0JGZlIweUtZeGJMMDRRcDIQMxIBdz09>

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AGENDA

1. Draft Steep Slopes Amendment
2. Adjournment

Sec. 5.2.4 Buildable Area Calculation & Steep Slopes Overlay District

The intent of this section is to:

- To protect sensitive natural features;
- To prevent overdevelopment of properties that contain sensitive and unbuildable areas, ~~and~~
- To minimize the potential for erosion, slope failure, and contamination of surface waters caused by the adverse effects of development on steep slopes, and
- To ensure that new development fits within the existing scale and intensity of the surrounding neighborhood.

(a) Buildable Area Calculation

For any properties two (2) or more acres in size within any RCO, WRM, RM, WRL, or RL zoning district, the maximum building density or lot coverage shall be calculated using the buildable area only. Buildable area shall be deemed to include only those portions of a property that are not inundated at least six months per year by water including streams, ponds, lakes, wetlands and other bodies of water; and lands with a slope in excess of 30%.

The DRB may under conditional use criteria allow up to 50% of the maximum building density or lot coverage to be calculated on lands with a slope between 15-30% if the applicant can demonstrate that the additional density or lot coverage will be compatible within the existing scale and intensity of the surrounding neighborhood, and not have an undue negative impact on sensitive natural features.

(b) Steep Slopes Overlay District

This overlay district consists of all lands delineated in Map 5.2.4-1 – Steep Slopes Overlay District. This overlay district contains all lands with an average slope of 15% or greater over 50-foot intervals and adjacent lands within 50 feet of the top of slope.

[Insert map]

The boundaries shown on the Steep Slopes Overlay Map may be supplemented or modified by examination of one or more of the following sources by the Development Review Board whenever an application is submitted for review.

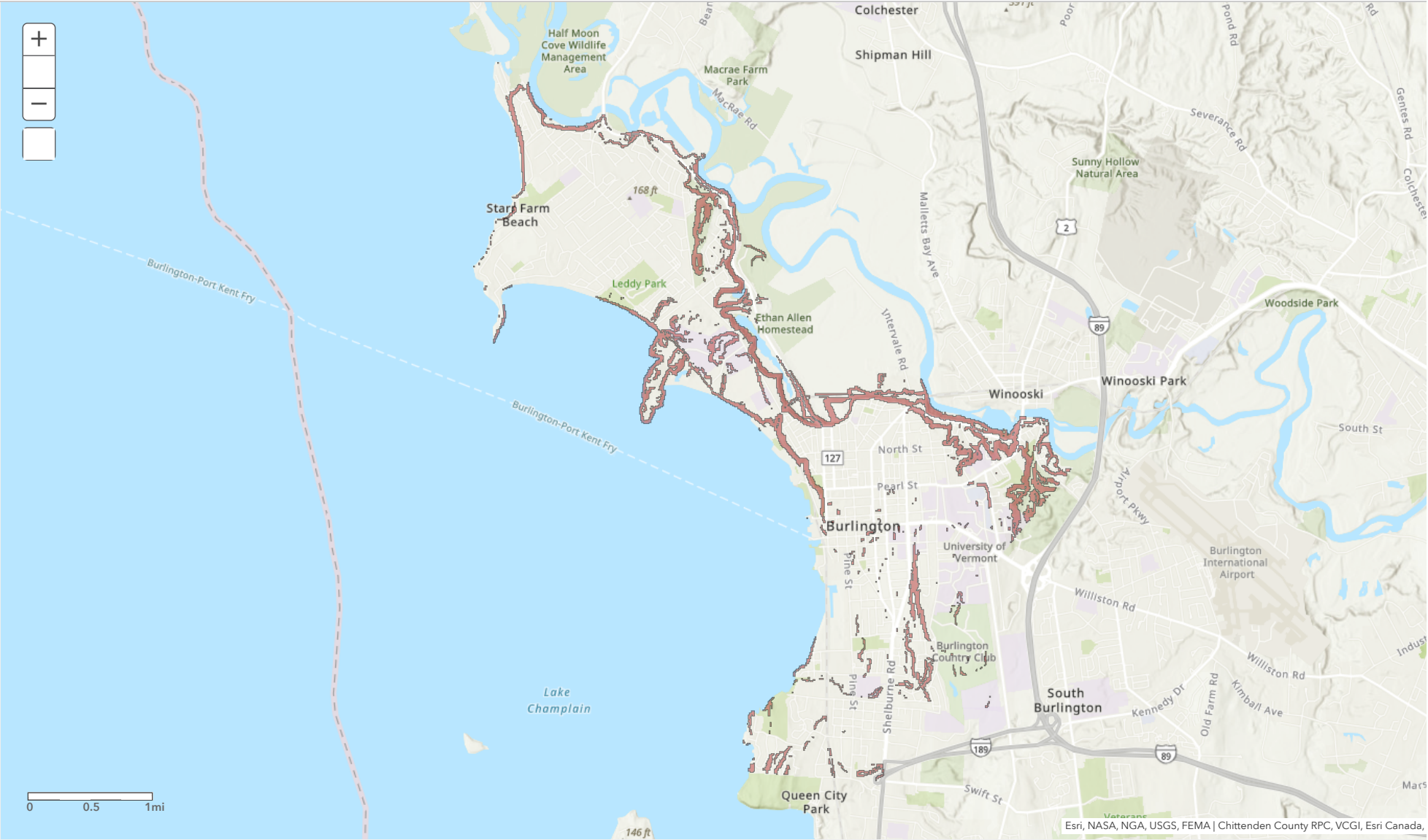
- Contour maps prepared from the most current orthophotography.
- On-site survey prepared by a registered professional engineer or surveyor.

The Development Review Board, in consultation with the City Engineer, shall determine whether or not the Steep Slope Overlay District has been shown accurately on the application plans. The DRB may require the applicant to revise the steep slope boundaries shown on the application plans.

The burden of proving the correct boundary shall be on the applicant, supported by engineering and/or surveying data or mapping.

1. District Specific Regulations

- A. The Steep Slope Overlay District shall be an overlay on all zoning districts. The regulations in the overlay are in addition to those regulations of the underlying zoning district.
 - B. These regulations apply to applications within the Overlay District that include 400 square feet or more of earth disturbance.
 - C. Finished slopes of all cuts and fills shall not exceed 30%, unless the applicant can demonstrate that steeper slopes can be stabilized and maintained adequately to the satisfaction of the DRB in consultation with the City Engineer.
 - D. Any fills placed on a steep slope shall be property stabilized and, when necessary, supported by retaining walls or other appropriate measures as approved by the DRB in consultation with the City Engineer.
 - E. Finished grades shall be reasonably safe from slide, collapse, or similar failure as determined by the DRB in consultation with the City Engineer.
2. Additional Application Requirements
- A. A site plan prepared by a registered professional engineer or surveyor that accurately depicts the proposed development and related land disturbance relative to the Steep Slope Overlay District boundaries, with all pertinent information describing the proposal, and a topographical survey depicting existing and proposed contour lines at no greater than 2-foot intervals. The plan shall depict all proposed cut, fill, and grading.
 - B. A geotechnical analysis prepared and stamped by a professional geotechnical engineer that determines the suitability of the steep slope for development.
 - C. A plan depicting the extent of proposed vegetation clearing.



From: **Sharon Bushor** <sfbushor@gmail.com>

Date: Fri, Jul 30, 2021, 7:04 PM

Subject: Steep slope ordinance

To: pbierman@uvm.edu <pbierman@uvm.edu>

Hi Paul, I plan on remotely attending the Planning Commission's Ordinance Committee meeting next Thursday. My issues remain setback of development from the edge if the slope; determination of the stability of the slope (not all slopes are created equal); not considering all of the sloped land when determining the percent of lot coverage; added runoff when developing on the top of the slope; impact on whatever is at the bottom of the slope. I hope you can attend or are able to send your comments.

When I was your City Councilor, I said I wanted to work on improving our Ordinance and hoped you would add your expertise. We are so lucky to have you in our Ward and City .

Sharon Bushor

Department of Permitting & Inspections

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William Ward, Director
Scott Gustin, AICP, CFM, Principal Planner
Mary O'Neil, AICP, Principal Planner
Ryan Morrison, Associate Planner
Vacant, Permit Technician
Ted Miles, Zoning Specialist
Alison Davis, Zoning Clerk
Charlene Orton, Permitting & Inspections Administrator



TO: Planning Commission Ordinance Committee
FROM: Scott Gustin
DATE: September 2, 2021
RE: Steep Slopes

The Comprehensive Development Ordinance has long-standing provisions to address steep slopes and site topography in two sections (5.2.4 & 6.2.2). Section 5.2.4 essentially deducts steep slopes from lot coverage and residential density calculations in the RCO, RL, and RM zoning districts. Sec. 6.2.2 (a) speaks to preserving steep slopes and other significant natural features on a site, and 6.2.2. (b) guides development towards working with existing topography rather than significantly altering it as part of any development proposal. There is nothing addressing slope stability or suitability for development.

A slope failure along Riverside Avenue in October 2019 and a number of prior slope failures have sparked interest in the Conservation Board and among some members of the Burlington community to develop standards to assess stability and suitability for development of steep slopes. Note that [Chapter 18: Soils and Foundations](#) of the International Building Code contains standards specifying when geotechnical analysis of development site soils are needed and what is required as part of that analysis. Any new zoning standard should not duplicate or contradict those standards. There is opportunity with a zoning amendment to establish a clear, local threshold for requiring such analysis – where and under what conditions. There is no need to create new technical specifications for what is included in that analysis.

A number of other communities have dedicated steep slope ordinances or specific zoning standards for them. In order to put together our own standards, we need to consider where such standards might apply and under what circumstances. Existing CDO language is below and is followed by an outline of considerations pertinent to developing more specific steep slope standards for inclusion in the CDO.

Existing Standards:

Sec. 5.2.4 Buildable Area Calculation

The intent of this section is to:

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- To prevent overdevelopment of properties that contain sensitive and unbuildable areas, and
- To ensure that new development fits within the existing scale and intensity of the surrounding neighborhood.

For any properties two (2) or more acres in size within any RCO, WRM, RM, WRL, or RL zoning district, the maximum building density or lot coverage shall be calculated using the buildable area only. Buildable area shall be deemed to include only those portions of a property that are not inundated at least six months per year by water

including streams, ponds, lakes, wetlands and other bodies of water; and lands with a slope in excess of 30%.

The DRB may under conditional use criteria allow up to 50% of the maximum building density or lot coverage to be calculated on lands with a slope between 15-30% if the applicant can demonstrate that the additional density or lot coverage will be compatible within the existing scale and intensity of the surrounding neighborhood, and not have an undue negative impact on sensitive natural features.

Sec. 6.2.2 Review Standards

(a) Protection of Important Natural Features:

The landscape, existing terrain and any significant trees and vegetation shall be preserved in their natural state insofar as practicable in keeping with the objectives of the underlying zoning district. Development and site disturbance shall preserve watercourses, wetlands, steep slopes, flood-prone areas, rock outcroppings, wildlife habitat and travel corridors, specimen trees and contiguous stands of forest, and other sensitive ecological and geological areas insofar as practicable in keeping with the objectives of the underlying zoning district. Site plans shall provide suitable buffers from any proposed site improvements, and maintain continuity and contiguousness of greenspace while allowing reasonable development in support of the overall intent of the zoning district. Where any natural features are proposed to be removed or the topography altered, special attention shall be given to replace or mitigate the loss of such features. Any development occurring on parcels containing significant natural areas identified in the city's *Open Space Protection Plan* shall avoid disturbance to these natural areas and establish appropriate buffers that protect their natural functions.

(b) Topographical Alterations:

Alteration to the natural contour of the site shall minimize grading, cut, and fill, and shall take necessary measures to protect against erosion and future instability. Any grade changes shall be in keeping with the general appearance of neighboring developed areas. In areas where more intense levels of development are encouraged, development should seek to take advantage of topographical changes to hide and/or blend new construction into the landscape. Proposed design and construction details for any cut and fill, or retaining walls over 3-feet in height, or any height along the lakeshore, shall be subject to review and approval by the city engineer before receiving approval of the site plan.

Considerations for creating steep slope standards in the CDO:

What areas are affected and based on what characteristics?

- Citywide, certain zoning districts, or certain areas (i.e. like Riverside Ave)

- Establish a steep slope overlay zone (this would make sense with a minimum interval assessment) or lot-by-lot assessment upon permit application. Overlay zones appear to be commonly used by other municipalities with steep slope standards.
- Percentage of lot (i.e. at least 10%), or
- Average slope over minimum interval (i.e. 50 ft)

What is the bar for applicability of steep slope standards?

- Presently, steep slope considerations in the CDO come into play on lots of 2 acres or more in the RCO, RL, and RM zones. The only implication is to buildable area (i.e. steep slopes are discounted from buildable area acreage).
- Should the CDO specify standards to apply for any development on a lot with steep slopes?
- Should there be a minimum threshold for applicability (i.e. 400 sf or more, within a certain distance of a steep slope)?
- Use the existing slope threshold of 15% or 30% or other?

Establish development standards

- Modify existing Article 5 Section 5.2.4 or establish a separate section
- Require geotechnical analysis as part of application
 - Finds slope suitable for development?
 - Or simply defer to the Building Inspector review under the IBC, Chapter 18?
- Minimum setback from top or toe of slope?
- Maybe geotechnical analysis if not set back from top of slope?
- Vegetation clearing limitations (or structural stabilization in the alternative)?
- Prohibit increase in slope on finished grades.
- Maximum buildable slope (25% is noted a few times in other municipalities' steep slope standards, Burlington's CDO cites 30%)

Standards found in other municipalities' steep slope standards already addressed in CDO

- Erosion prevention and sediment control
- Stormwater management
- Landscaping / tree retention
- Build with existing topography



Burlington Planning Commission

Ordinance Committee Meeting Minutes

Thursday, January 6, 2022 @ 5:15 PM

645 Pine St. & via Zoom

Attendance

- **Committee Members:** Emily Lee (EL), Caitlin Halpert (CH), Yves Bradley (YB), Bruce Baker (BB)
- **Absent:**
- **Public:** Sharon Bushor
- **Staff:** Scott Gustin, Mary O'Neil (Permitting & Inspections)

1. Draft Steep Slopes Amendment

A MOTION was made by EL and SECONDED by CH:

Approve the amendment as discussed and move it to the full Planning Commission.

- Condition the geotechnical analysis at the end of project review.
- Project location within the steep slope overlay should not, by itself, require DRB review.

Vote: 3-0-0 (YB exited the meeting early)

2. Adjournment

The Committee adjourned at 6:20 PM.