

# MODEL LAKE SHORELAND PROTECTION DISTRICT BYLAW

## Section 1 AUTHORITY

This bylaw is adopted by the Town of \_\_\_\_\_ under authority of 24 V.S.A. § 4424, 24 V.S.A. § 4302(c)(5)(B), 24 V.S.A. § 4411(b)(3), 24 V.S.A. § 4414 (1)(D) &(G), 10 V.S.A. § 1422, and 10 V.S.A. §1425.

## Section 2 PURPOSE

The purpose of this bylaw is:

- A. To protect the natural features and functions of the Town's shorelands and conserve undeveloped wooded vegetation adjacent to the Town's lakes and ponds.
- B. To promote the protection of naturally vegetated areas and the re-vegetation of native plants and trees along water bodies within the Town to reduce the impact of stormwater runoff, prevent soil erosion, protect wildlife and fish habitat and maintain water quality.
- C. To encourage low impact development stormwater management site design, site development, building design and landscape design techniques that infiltrate, filter, store, evaporate and detain stormwater where it falls.
- D. To limit and properly manage Development in areas that are generally unsuitable for Development or use due to erosion, limiting soil conditions, Steep Slopes, Bluffs, or other major physical constraints.
- E. To allow for compatible forms of shoreland Development that will preserve shoreland vegetation, encourage re-vegetation, protect wetlands and terrestrial and aquatic wildlife habitats, and conserve the scenic beauty and recreational potential that currently exists along shorelands within the Town of \_\_\_\_\_.

## Section 3 APPLICABILITY

The requirements of this bylaw shall apply to all land in the Town of \_\_\_\_\_ defined as the Shoreland Protection District in Section 4 below.

## Section 4 DEFINITIONS<sup>1</sup>

For purposes of this bylaw, the following terms shall apply:

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<sup>1</sup> Each term that is defined in Section 4 of this bylaw will be capitalized throughout the document.

**Bluff.** A high steep bank usually formed by erosion.

**Building Envelope.** The area on a lot that encompasses Development as defined below.

**Development.** Any human-made change to improved or unimproved real estate, including but not limited to the construction, re-construction, conversion, structural alteration, relocation, or enlargement of any building or other structure, or of any filling, grading, paving, excavation, earth moving, tree, shrub or ground cover removal, storage of equipment or materials, or the extension of use of land.

**Natural Ground Cover.** Any herbaceous plant, woody seedling or shrub less than three feet in height. Natural Ground Cover shall also include naturally occurring leaf or needle litter, stumps, decaying woody debris, stones, and boulders. Natural Ground Cover shall not include lawns, landscaped areas, gardens, invasive species, exotic species, imported organic or stone mulches, or other artificial materials.

**Impervious Surface.** A constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to Development. Examples include roads, rooftops, out buildings, decks, paths, patios, parking areas, and concrete, asphalt or gravel driveways.

**Lake<sup>2</sup>.** For purposes of this bylaw the following waterbodies in the Town of \_\_\_\_\_ are defined as Lakes: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

**Mean Water Level.** The normal summer (June 1 – September 15) water level, measured in feet above sea level, of Lakes as determined by an average of water level readings available over time or as established by the Vermont Natural Resources Board.

**Mitigation.** An action required of a shoreland property owner designed to compensate for lost Shoreland Buffer or increased Impervious Surface area. See Figures 9B and 9C of this bylaw.

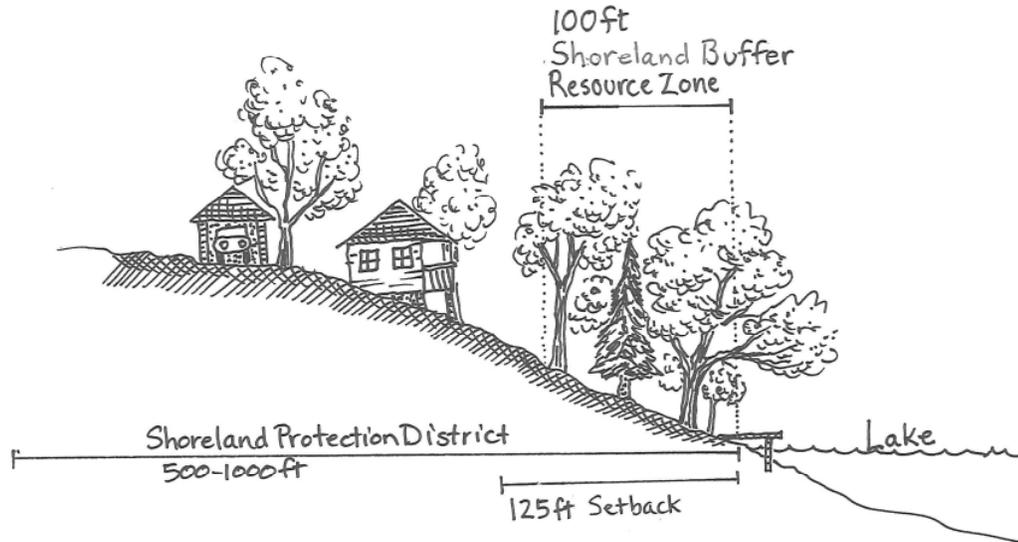
**Nonconforming Use or Structure.** A use of land or structure lawfully in existence as of the effective date of these regulations that is not in compliance with the standards for the Shoreland Buffer Resource Zone and Shoreland Protection District.

**Shoreland Protection District.** The width of land measured horizontally from the Mean Water Level to at least 500 feet but no more than 1000 feet from all Lakes. The Shoreland Protection District incorporates the Shoreland Buffer Resource Zone. [See Figure 4A.]

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<sup>2</sup> A Lake is defined in Vermont state statutes as a body of standing water, including ponds and reservoirs, that may have natural or artificial water level control. Artificial off-stream ponds entirely on one owner's property and reservoirs specifically constructed for snowmaking water storage, golf course irrigation, stormwater management, and fire suppression shall not be considered lakes.

**Figure 4A. Shoreland Protection District with 100 foot Shoreland Buffer Resource Zone**



**Shoreland Buffer.** The land abutting a Lake consisting of trees, shrubs, Natural Ground Cover and an understory of plants that functions to filter runoff, control sediment and nutrient movement, control erosion and provide fish and wildlife habitat.

**Shoreland Buffer Resource Zone.** The width of land measured horizontally from the Mean Water Level at least 100 feet from all Lakes. The Shoreland Buffer Resource Zone may exceed 100 feet if it includes a Bluff and/or a Steep Slope as defined in this Section. In that case, the Shoreland Buffer Resource Zone shall include the entire Bluff and/or Steep Slope and all land located at least 25 feet from the top of the Bluff and/or Steep Slope. [See Figure 4A.]

**Steep Slope.** Shoreland having slopes equal to or greater than 15%.

**Tree Canopy.** A dense ceiling of closely spaced trees and their branches.

### **Section 5**

#### **REMOVAL OF UNSAFE TREES AND LIMBS IN THE SHORELAND BUFFER RESOURCE ZONE**

- A. A property owner may remove, or may cause to have removed from the Shoreland Buffer Resource Zone, trees and limbs that threaten personal safety or structures. The cutting and removal shall be conducted so as to:
1. prevent damage to surrounding healthy trees, limbs, saplings, and shrubs;
  2. minimize damage to Natural Ground Cover;
  3. prevent soil erosion and sedimentation to the Lake; and

4. leave all stumps intact.
- B. In any enforcement action for removal of trees or limbs in violation of this section, the burden of proving that the trees and limbs removed were unsafe shall be on the property owner.
- C. Proof that removed trees and limbs were unsafe shall include, but are not limited to, the following:
1. photographs of the property that clearly show the unsafe trees and limbs; and
  2. written certification signed by an individual with knowledge and experience in assessing tree health – such as a licensed forester, certified arborist, or licensed landscape architect – that the trees and limbs that were removed were unsafe.

**Section 6**  
**GRID AND POINT SYSTEM CLEARING LIMITATIONS**  
**IN THE SHORELAND BUFFER RESOURCE ZONE**

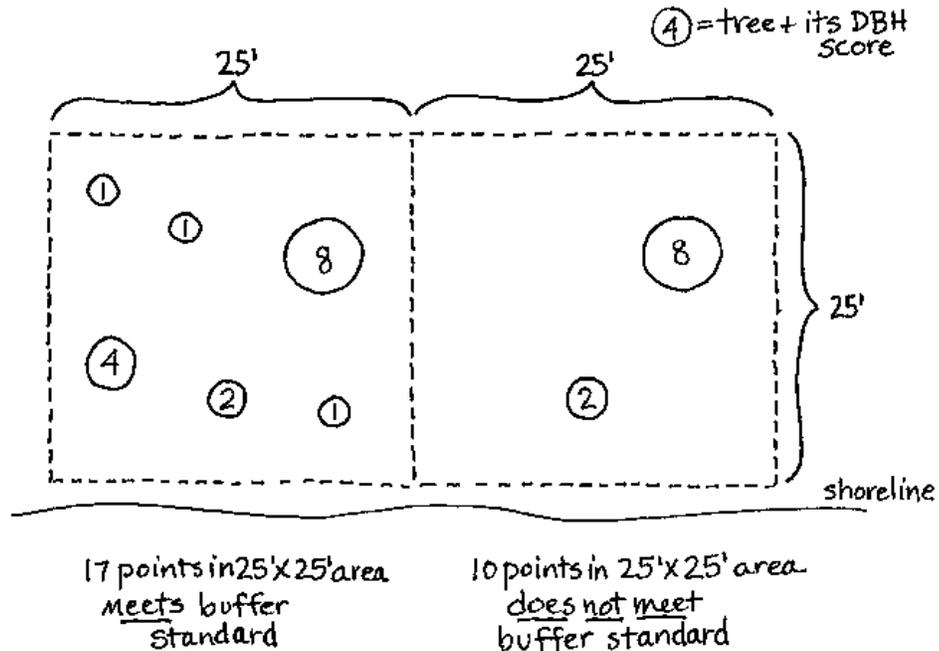
- A. Within the Shoreland Buffer Resource Zone, tree coverage shall be managed with a 25×25 foot grid and points system. The trees within each segment shall be given points according to their diameter at 4.5 feet off the ground (DBH). Tree coverage must total 12 points in each grid. Trees and saplings may be cut as long as the sum of the scores for the remaining trees and saplings in the grid segment is at least 12 points. [See Figure 6A.]

<b>Grid-and-Point System, Vermont</b>	
<b>Diameter (DBH)</b>	<b>No. of Points</b>
Under 2"	0
2" - < 4"	1
4" - < 8"	2
8" - < 12"	4
12" and greater	8

- B. All cutting and removal permitted under this section shall be conducted so as to:
1. prevent damage to surrounding trees and saplings;
  2. minimize damage to Natural Ground Cover;
  3. prevent soil erosion and sedimentation to the waterbody; and
  4. leave all stumps intact.

- C. Property owners shall not be required to obtain new trees to fulfill the 12-point tree coverage requirement on land within the Shoreland Buffer Resource Zone legally in existence on the effective date of these regulations. However, property owners shall not decrease the point value of any grid section that does not meet the required 12-point score.

***Figure 6A. Grid and Point System Example***



- D. In addition to the grid and point clearing limitations, no openings in the Tree Canopy greater than 250 square feet shall be allowed.
- E. Natural Ground Cover shall not be removed and no cutting or removal of vegetation below three feet in height shall be allowed, except for an allowable foot path or stairway as provided in Section 8 of this bylaw.
- F. In any enforcement action for removal of trees or saplings in violation of this section, the burden of proving that the removal of trees or saplings pursuant to this section did not bring the sum of the scores of the remaining trees and saplings in that segment below 12 shall be on the property owner.
- G. Proof that the removal complied with grid and point system clearing limitations provided in this section shall include, but not be limited to the following:
1. photographs of the property which clearly show the trees or saplings; and
  2. a sketch of the property showing the location and point scores of the trees and saplings that will remain on the property.

H. In addition to any fine or injunctive order levied against the property owner, removal of trees or saplings in violation of this section shall require implementation of a shoreland restoration plan designed by a qualified professional that addresses the following:

1. The number, size, and species of trees and saplings removed in violation of the regulation;
2. A re-planting schedule including site conditions, planting time and a guarantee that at least 80% of the plants will survive the first year. If more than 20% of the new plants die within the first year, they shall be replaced.
3. A site restoration map of the cleared area drawn to scale that includes structures, roads, and the location of existing trees, trees that were removed and proposed replacement trees.

### **Section 7**

#### **GENERAL STANDARDS WITHIN THE SHORELAND BUFFER RESOURCE ZONE**

Lake shoreland will be protected from Development, including roads and driveways, by maintaining and/or establishing undisturbed naturally vegetated riparian buffers within the Shoreland Buffer Resource Zone as follows:

- A. Except as provided in Sections 5, 6, 8 and 9 of this bylaw, no Development is allowed in the Shoreland Buffer Resource Zone.
- B. New Development shall be set back, measured horizontally, at least 125 feet from all Lakes. This distance includes the minimum Shoreland Buffer Resource Zone of 100 feet, plus an additional 25 feet to prevent incursion into the Buffer Zone during construction. The Shoreland Buffer Resource Zone shall exceed 100 feet if it includes a Bluff and /or a Steep Slope as defined in Section 4, in which case, the Shoreland Buffer Resource Zone shall include the entire Bluff and/or Steep Slope and all land located at least 25 feet from the top of the Bluff and/or Steep Slope. [See Figure 4A.]
- C. The minimum lot shoreline frontage shall be 100 feet and the minimum depth shall be 200 feet.
- D. Roads and driveways shall not be constructed in the Shoreland Buffer Resource Zone.
- E. New lawn areas within the Shoreland Buffer Resource Zone shall not be permitted. Property owners with lawn areas in the Shoreland Buffer Resource Zone are encouraged to return lawn areas to their naturally vegetated state. Supplemental planting with appropriate vegetation to restore and enhance the effective filtering and bank stabilization functions of a Shoreland Buffer is encouraged.
- F. Any areas within the Shoreland Buffer Resource Zone that are disturbed as the result of a permitted or conditional use or the expansion of a nonconformity as provided in Sections 8

and 9 shall be restored through natural regeneration and/or planting of native shrubs and trees appropriate to the site and designated as “no mow zones.”<sup>3</sup>

- G. Riprap and retaining walls used for ornamental purposes or for terracing natural slopes that disturb natural vegetation are not permitted within the Shoreland Buffer Resource Zone.

### **Section 8**

#### **NEW USES AND ENCROACHMENTS WITHIN THE SHORELAND BUFFER RESOURCE ZONE**

- A. Permitted uses which do not require a zoning permit:

1. Removal of unsafe trees as provided in Section 5.
2. Removal of trees or saplings so long as the clearing limitations provided in Section 6 are met.
3. Pruning the lower third of the branches of a tree provided the survival of the tree is not endangered.
4. Cutting of shrubs or groundcover smaller than 4 inches in diameter for an access footpath not to exceed a cleared width of 6 feet, with no imported fill, and constructed so as to prevent erosion, avoid soil disturbance and disperse runoff into vegetated areas using zigzag or switchback construction. The construction shall not involve earth moving equipment and stumps and roots must remain intact.
5. Removal of vegetation only necessary to accommodate the placement of a stairway and associated landing, or lift for Americans With Disabilities Act (ADA) accessibility and access path. Trees, shrubs, and Natural Ground Cover shall be maintained within these areas. The construction shall not involve earth moving equipment. Stairways and lifts shall meet the following design requirements:
  - a. Stairways and lifts shall not exceed four feet in width.
  - b. Landings for stairways and lifts shall not exceed 32 square feet in area.
  - c. Canopies or roofs are not allowed on stairways, lifts, or landings.

- B. **Conditional Uses.** The [DRB/ZBA] may authorize the following activities within the Shoreland Buffer Resource Zone, subject to the following provisions and subject to conditional use review procedures under Section \_\_\_:

1. Shoreland Buffer re-establishment and bank stabilization projects where the [DRB/ZBA] finds that the purposes of this section will be protected through erosion controls, supplemental planting, protection of existing vegetation, and/or other measures.

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<sup>3</sup> Turf grass is not an appropriate choice for shoreland buffer re-vegetation.

2. Stairways and lifts wider than four feet and landings larger than 32 square feet with justification for ADA accessibility or improved erosion control.<sup>4</sup>

**Section 9**  
**NONCONFORMING USES AND STRUCTURES**  
**WITHIN THE SHORELAND BUFFER RESOURCE ZONE**

- A. Any structure or use of land legally in existence as of the effective date of these regulations that does not meet the requirements of these regulations shall be considered nonconforming. Nonconforming uses and structures within the Shoreland Buffer Resource Zone are subject to the following conditions:
1. A Nonconforming Structure may undergo normal maintenance and repair provided that such action does not increase the degree of nonconformity. Normal repair does not include reconstruction. See subsection C of this section regarding reconstruction.
  2. Any expansion of a Nonconforming Structure, including the addition of decks or patios, shall not extend towards the water beyond the existing nonconformity. [See Figure 9A.]
  3. A Nonconforming Structure may be enlarged, extended, reconstructed, expanded, modified or relocated only with the approval of the [DRB/ZBA], subject to conditional use review under Section \_\_. The [DRB/ZBA] must determine that the enlargement, extension, expansion, modification or relocation does not increase the degree of nonconformity, or compensates for lost Shoreland Buffer or increased Impervious Surface area and meets all other applicable requirements of these regulations.
  4. Where the expansion of a Nonconforming Structure is permitted, the [DRB/ZBA] may require the applicant, as a Mitigation measure, to return any mowed or cleared areas to a naturally vegetated state with supplemental planting of appropriate native vegetation in order to meet the tree coverage grid and point system requirements provided in Section 6 of this bylaw. [See Figure 9B.]

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<sup>4</sup> Any work (fill, construction, sea walls, retaining walls, docks, moving stones, rock toes etc.) beyond the Mean Water Level requires a state Shoreland Encroachment Permit.  
[www.anr.state.vt.us/dec/waterq/permits/htm/pm\\_encroachment.htm](http://www.anr.state.vt.us/dec/waterq/permits/htm/pm_encroachment.htm)

**Figure 9A. Expansion of a Nonconforming Structure**

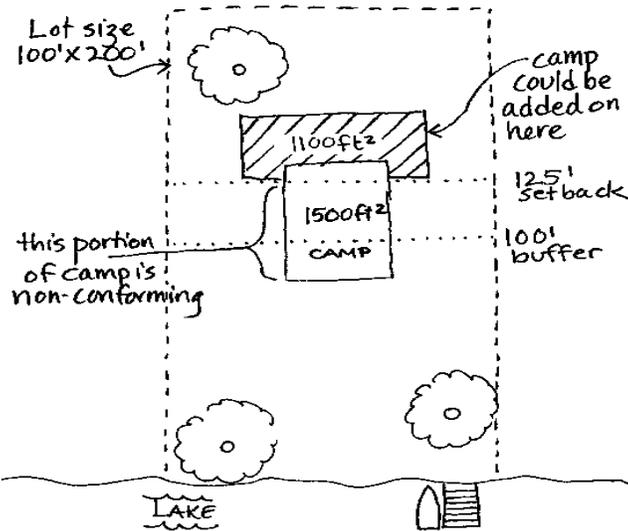
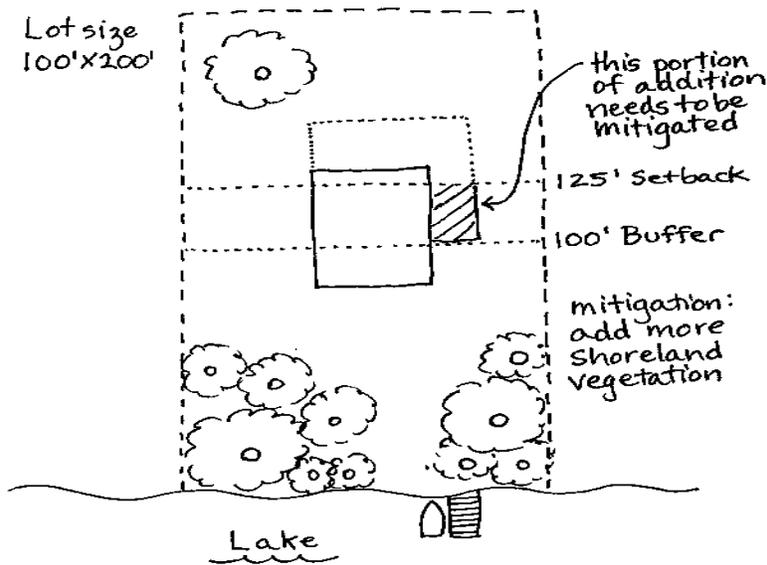


Figure 9A illustrates Impervious Surface coverage of 13%, computed as follows:

Assume that the lot size is 100 ft. x 200 ft. = 20,000 sq. ft.  
 The 1,500 sq. ft. camp + 1100 sq. ft. addition = 2600 sq. ft.  
 $2600 \div 20,000 = 13\%$  Impervious Surface.

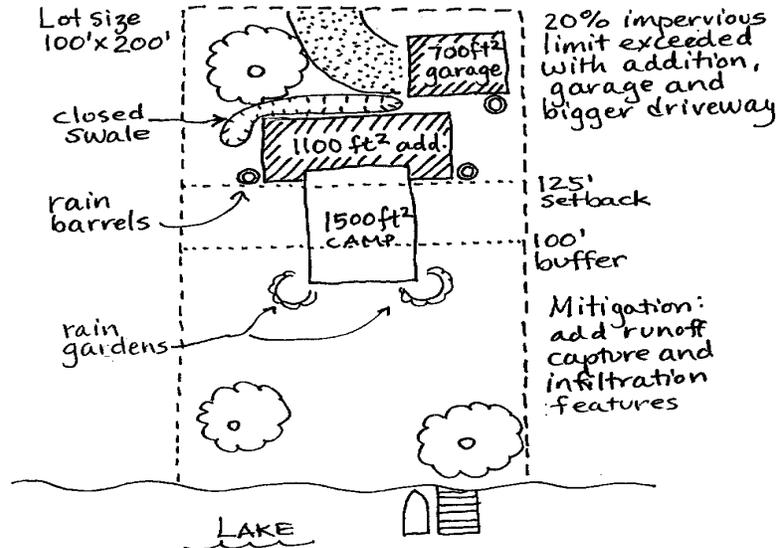
**Figure 9B. Nonconforming Structure Mitigation – Adding Vegetation**



5. A proposed expansion to a nonconforming structure resulting in 20% or greater Impervious Surface coverage may be permitted by the [DRB/ZBA] with an approved

mitigation plan that includes runoff capture and infiltration structures to prevent stormwater runoff from reaching the lake. [See Figure 9C.]

**Figure 9C. Nonconforming Structure Mitigation – Stormwater Capture and Infiltration**



6. No part of the Shoreland Buffer Resource Zone shall be forfeited to replace lawn areas lost as a result of the expansion of a Nonconforming Structure.
7. Expansion of Nonconforming Structures shall comply with the erosion prevention and sediment control standards in Section 11 of these regulations.
8. New roads and driveways are not allowed as part of an expansion of a Nonconforming Structure. However, the [DRB/ZBA] may authorize improvements to existing nonconforming roads and driveways if such improvements will result in a reduction of existing shoreland erosion and unbuffered stormwater runoff.
9. Cleared openings and lawns within the Shoreland Buffer Resource Zone legally in existence on the effective date of these regulations may be maintained. However, areas that were once fields, lawns or cleared openings but have reverted to primarily shrubs, trees, or other woody vegetation are regulated as a buffer under these regulations.

B. In accordance with 24 V.S.A. § 4469(a) and Section \_\_\_ of this bylaw, a variance from the [DRB/ZBA] is required for any Development on pre-existing, nonconforming lots that currently does not comply with the Shoreland Buffer Resource Zone setback, lot shoreline frontage, and/or minimum depth standards.

**C. Reconstruction and Relocation**

1. If a nonconforming structure is damaged or destroyed by more than 50% of its market value, it may be reconstructed if a permit is obtained within 18 months and if the

reconstruction meets the minimum shoreland setback requirement of 125 feet to the greatest practical extent. [See Figure 4A.]

2. If the Building Envelope can be relocated entirely outside the minimum shoreland setback area of 125 feet, no portion of the structure shall be placed at less than the required setback. [See Figure 4A.]
3. A structure may be reconstructed in the existing footprint and same volume if less than 50% of the market value is lost. This will be considered repair under subsection A-1 of this section.
4. A Nonconforming Structure can be moved, provided it meets the minimum shoreland setback requirement of 125 feet to the greatest practical extent and disturbed areas are restored to a naturally vegetated state with supplemental planting of appropriate native vegetation in order to meet the tree coverage grid and point system requirements provided in Section 6 of this bylaw.<sup>5</sup>

## **Section 10**

### **NEW USES AND ENCROACHMENTS WITHIN THE SHORELAND PROTECTION DISTRICT**

New uses and encroachments and expansions of nonconformities allowed within the Shoreland Buffer Resource Zone, which comprises the first 100 feet of the Shoreland Protection District, are outlined in Sections 8 and 9 of this bylaw. [See Figure 4A.] The [DRB/ZBA] may authorize Development within the remainder of the Shoreland Protection District subject to the following conditions, which in turn are subject to conditional use review procedures under Section \_\_:

- A. The minimum lot shoreline frontage shall be 100 feet, the minimum lot depth shall be 200 feet, and the Building Envelope shall not exceed 25% of the lot area.
- B. Within the Building Envelope, the total area of the lot covered by Impervious Surfaces – such as structures, driveways, parking areas, decks, patios, and other non-vegetated surfaces – shall not exceed 20% of the lot area. [See Figure 9A to determine Impervious Surface coverage.]
- C. New Development shall comply with the erosion prevention and sediment control standards in Section 11 of this bylaw.
- D. Stormwater shall be managed through land development strategies and best management practices as recommended by the state in the [Vermont Low Impact Development Guide for Residential and Small Sites](#).
- E. Runoff from cleared or impervious areas within the Shoreland Protection District shall not enter the Shoreland Buffer Resource Zone in channelized form.

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<sup>5</sup> Refer to National Flood Insurance Program requirements if a substantially damaged non-conforming structure is located within the flood hazard area. The town office has flood hazard maps on file showing the location of the flood hazard area.

## **F. Roads and Driveways**

1. Roads and driveways shall be properly crowned to allow stormwater to flow immediately off the surface into surrounding vegetation or a stabilized ditch. Water bars can also be utilized to intercept water flowing lengthwise down the surface and transfer it off to the side into vegetation or ditched areas.
2. Banks shall have a slope of 2:1 (horizontal: vertical) or less.
3. Grades shall be no steeper than 10%. New roads or driveways crossing Steep Slopes shall be avoided.
4. Drainage ditches with slopes less than 5% shall be lined with grass and ditches; slopes greater than 5% shall be lined with riprap.
5. Drainage ditches shall empty, in a diffused manner, into vegetated buffer strips set back at least 100 feet from the water's edge.
6. Adequate and correctly installed cross drains, culverts, and water turnouts shall be provided to avoid ditch erosion.

### **Section 11**

#### **SHORELAND PROTECTION DISTRICT EROSION PREVENTION AND SEDIMENT CONTROL STANDARDS FOR NEW CONSTRUCTION**

- A. The extent of earthwork, erosion potential, and protection of critical features shall be considered in site selection and design. Site selection shall consider existing topography, existing drainage courses, vegetation and soil conditions. Erosion prevention and sediment control measures shall be well thought-out early in the selection process.
  1. Development of a lot or site shall require the least possible amount of vegetation clearing, soil disturbance, exposure time, soil compaction and topography change.
  2. Lot coverage and building footprints shall minimize site disturbance and preserve large areas of undisturbed space. Environmentally sensitive areas shall be a priority for preservation.
  3. Runoff from above the construction site shall be intercepted and directed around the disturbed area into an undisturbed vegetated area.
  4. Vegetated strips and swales, sediment traps, and silt fences shall be used to prevent soil from leaving the site.
  5. There shall be no soil compaction outside the construction disturbance area, which shall be identified and delineated in the field with appropriate safety or landscape fencing. In

areas outside the disturbance area, there shall be no storage of construction vehicles, construction materials, or fill, nor shall these areas be used for circulation.

6. Immediate seeding and mulching or the application of an erosion control mat shall be completed at the conclusion of each phase of construction, or at the conclusion of construction if not phased. Use only matting with non-fixed net joints so animals will not get trapped in the matting.
7. Development, grading or clearing of vegetation on land where the slope is greater than 15% is prohibited.

## **B. Pre-Development Submission Requirements**

1. An existing condition site assessment providing slope profiles, existing gradients, sensitive natural communities, and site features that aid in stormwater management such as natural drainage ways, Tree Canopy and vegetated lands.
2. A map drawn to scale showing the location, extent and type of proposed Development and land disturbance and its proximity to the Shoreland Buffer Resource Zone and Lake. The plan shall include consideration of low impact development concepts as recommended in the [Vermont Low Impact Development Guide for Residential and Small Sites](#).
3. An erosion and sediment control plan that incorporates accepted management practices as recommended by the state in [The Low Risk Site Handbook for Erosion Prevention and Sediment Control](#).<sup>6</sup>

## **Section 12 INDEPENDENT TECHNICAL REVIEW**

The [DRB/ZBA] may retain independent consultants to conduct technical review as enabled in 24 VSA § 4440(d) for Development subject to these regulations and whose services shall be paid for by the applicant. The consultant(s) shall work at the [DRB/ZBA]'s direction and shall provide the [DRB/ZBA] such reports and assistance as the [DRB/ZBA] deems necessary to determine compliance with this bylaw.

## **Section 13 OTHER LAWS**

This bylaw is in addition to all other regulations of the Town of \_\_\_\_\_ and all applicable laws of the State of Vermont.

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<sup>6</sup> Any construction activity that disturbs one or more acres of land, or is part of a larger development plan that will disturb an acre or more requires a Vermont state permit for stormwater discharges from construction sites.

**Section 14**  
**ABROGATION AND GREATER RESTRICTIONS**

This bylaw does not intend to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this bylaw imposes greater restrictions, the provisions of this bylaw shall prevail. All other regulations inconsistent with this bylaw are hereby repealed to the extent of the inconsistency only.

**Section 15**  
**SEVERABILITY**

If any section of this bylaw is held by a court of competent jurisdiction to be invalid, such finding shall not invalidate any other part of this bylaw.