Stormwater Regulation Revisions

Selectboard DRAFT – 4/15/2015

Selectboard public hearing To Be Determined; PC public hearing on 7/23/2014

Note: words in italics are for clarification and are not for inclusion in the regulations

Pursuant to the Hinesburg Town Plan (section 4.3), the Planning Commission recommends that the Town better address stormwater runoff through: 1) Education/outreach; 2) Town infrastructure projects and improvements; 3) Improved regulations for new development. The following proposal deals with regulation improvements.

Regulations will only help address stormwater from new development on a site by site basis. The Planning Commission recommends that the Selectboard take additional non-regulatory measures. There are significant stormwater impacts from aggregate/cumulative development over time, existing development (especially in the historic village core which is largely built out), and our Town road system. The municipality is the only entity that can address these types of impacts. As such, it is time to recognize the importance of municipal stormwater management and infrastructure. The Town should be actively planning for more stormwater control and treatment infrastructure as well as the continued maintenance of the limited infrastructure we already have. Occasional grants and partnerships with non-profit groups are insufficient. The Selectboard should explore municipal funding mechanisms (e.g., special assessment districts, capital budgeting & impact fees, regular budget allocations, etc.) to provide the necessary resources for staffing, project planning & implementation, and maintenance.

Stormwater and Erosion Control:

This language will be added to both the Subdivision Regulations and the Zoning Regulations.

- *Subdivision Regulations – REVISES/REPLACES section 6.6*
- *Zoning Regulations – NEW section under Article 5 – General Provisions*

Purpose

a. To promote effective stormwater management practices that focus on the immediate source of generated stormwater. The intent is to maintain pre-development hydrology through site design, site development, building design and landscape design techniques that infiltrate, filter, store, and evaporate stormwater;
b. To protect natural resources on the development site from degradation that could be caused by construction activities and post-construction conditions with specific attention to streams, lakes, wetlands, floodplains and other natural aquatic systems;
c. To protect other nearby properties from damage that could be caused by stormwater and sediment during construction activities and post-construction conditions on the development site;
d. To reduce the impacts from impervious surfaces such as streets, parking lots, rooftops and other paved surfaces; and
e. To protect the safety of the public and animal life from flooding and stream bank erosion, reduce public expenditures in removing sediment from stormwater drainage systems and

natural resource areas, and to prevent damage to municipal infrastructure (e.g., roads, culverts, etc.) caused by inadequate stormwater controls.

Erosion Control

Erosion control requirements shall apply to land development that requires a zoning permit or DRB approval, within the disturbance guidelines listed below. For such projects all areas exposed during construction shall be protected from erosion in accordance with the Low Risk Site Handbook for Erosion Prevention and Sediment Control published by the Vermont Department of Environmental Conservation (most current version, original edition is circa 2006), as qualified below.

1. If the total disturbance area is 3,000-10,000 square feet – follow requirements 1,2,4,6,8-12. Requirement #8 requires stabilization of disturbed areas within 7, 14, or 21 days of initial disturbance, followed by stabilization at the end of each work day with certain exceptions. For the purposes of these regulations, the initial time period shall be 7 days.

2. If the total disturbance area is greater than 10,000 square feet – follow all twelve requirements (see below for information on requirement #7 – i.e., permanent stormwater controls). Requirement #8 requires stabilization of disturbed areas within 7, 14, or 21 days of initial disturbance, followed by stabilization at the end of each work day with certain exceptions. For the purposes of these regulations, the initial time period shall be 7 days.

Proper erosion control measures shall also be applied to off-site locations that receive soil or fill from the project in question.

An erosion control plan (diagram and supporting narrative) shall be submitted with the zoning permit application or DRB application if any of the following apply.

1. If there is to be any disturbance with slopes of 15% or steeper.
2. If there is to be any disturbance within Town designated stream setback and/or buffer areas.
3. If there is to be any disturbance to a channel, ditch or other concentrated stormwater conveyance.
4. If the total area of disturbance is 10,000 square feet or greater.

It is the applicant's responsibility to demonstrate that the plan will adequately control erosion, and has, at a minimum, been prepared in accordance with the Low Risk Site Handbook for Erosion Prevention and Sediment Control. Additional measures from the Vermont Standards & Specifications for Erosion Prevention and Sediment Control (most current version, current edition is circa 2006) may be necessary for sites that are not low risk per the categories outlined in the State of Vermont's construction general permit.

Stormwater Control

A stormwater control plan (diagram and supporting narrative) shall be submitted for any land development that requires a zoning permit or DRB approval, and which creates new impervious surface area of 10,000 square feet or more. The calculation of new impervious surface area

may be offset through the removal of existing impervious surface in other areas of the site. Such an offset shall be calculated on a 1:1 area basis – new impervious vs. existing impervious removed. Such an offset shall be contingent on substantially better stormwater infiltration for the area where existing impervious surfaces were removed. This may require the replacement of sub-base material in addition to surface materials. ~~This~~ The stormwater control plan shall be prepared by a qualified, licensed engineer, and shall include a certification by the engineer that the plan conforms to the following five provisions:

1. The latest version of the Vermont Stormwater Management Manual:
   - Water Quality Treatment Standard
   - Channel Protection Treatment Standard
   - Groundwater Recharge Treatment Standard
   - Overbank Flood Protection Treatment Standard
   - Extreme Flood Protection Treatment Standard

   Credits and waivers indicated in the Vermont Stormwater Management Manual may be used to partly or wholly meet these standards. Evidence of an approved State stormwater permit using the standards contained in the latest version of the manual will constitute compliance with the ~~five~~ VT Stormwater Management standards listed above (e.g., water quality, channel protection, groundwater recharge, overbank flood protection, extreme flood protection). A State stormwater permit approved under an earlier version of the manual shall not constitute compliance with the five standards listed above – i.e., compliance with the latest version of the Vermont Stormwater Management Manual must be demonstrated.

2. The plan shall locate soils well suited for infiltration, and address the extent to which such soils will be utilized to infiltrate stormwater.

3. Post-development drainage patterns shall mimic (except as noted below) pre-development drainage patterns to the greatest extent possible, especially with regard to where stormwater leaves the site. The post-development drainage pattern shall improve upon (rather than mimic) the pre-development drainage conditions if those conditions already contribute to deleterious stormwater runoff impacts. The stormwater plan shall be designed so that off-site drainage areas will not be overwhelmed during larger storm events (i.e., up to and including a 100-year storm) to a greater extent than in pre-development conditions. The evaluation shall demonstrate that off-site areas will not be subject to increased erosion during a 10-year storm event, and will not otherwise be adversely impacted during a 10-year and a 100-year storm event. The off-site areas to be evaluated shall include:

   a. The area between identifiable stormwater discharge points from the site and the receiving water body (e.g., stream, river, lake) at a point along the water body where the site's drainage area constitutes less than 10% of the water body's drainage area at that location.

b. Should the receiving water body be distant from the site discharge points, the evaluation shall extend as far off site as necessary to reach a point where the site's drainage area constitutes less than 10% of the surrounding drainage area.

~~**INSERT DIAGRAMS HERE**~~

Figure 1 - Receiving water body proximate

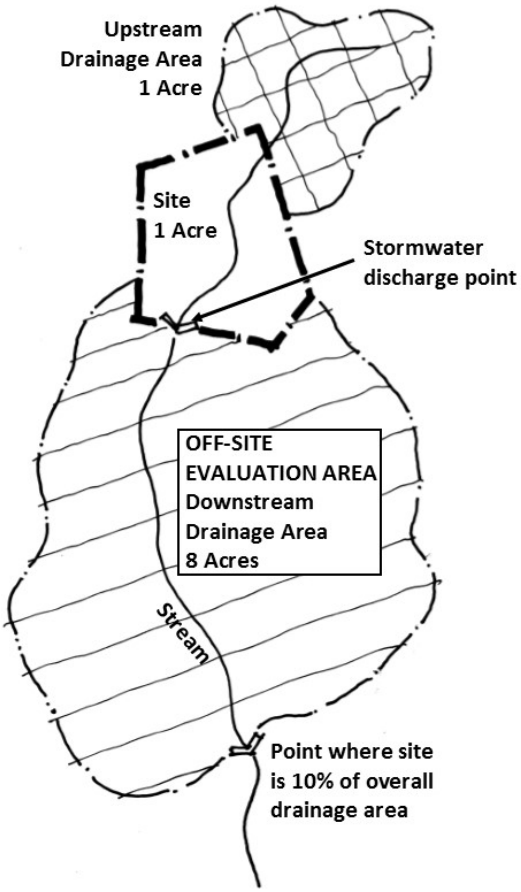
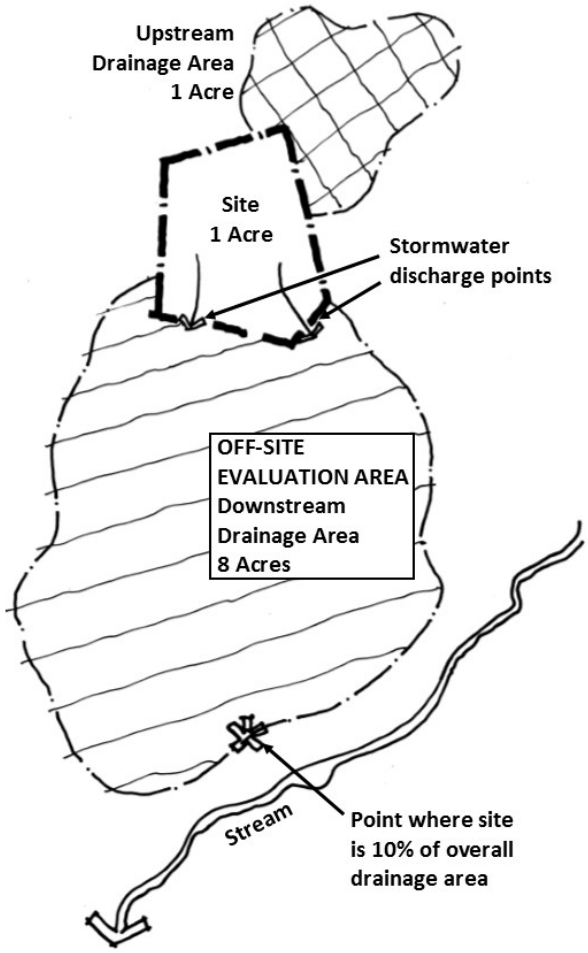


Figure 2 - Receiving water body distant



4. Once completed, all such stormwater systems shall be certified as installed per the plan by a qualified, licensed engineer. The plan shall include clear provisions for inspection and long term maintenance by a qualified professional.

~~4.~~5. Low Impact Development (LID). ~~For all development requiring a stormwater control plan (i.e., new impervious surface of 10,000 square feet or more), t~~The use of LID design approaches shall be implemented, taking into consideration the site's soil characteristics, slope, and other relevant factors. To the extent that LID design approaches are not proposed in the stormwater management plan, the applicant shall provide a full justification and demonstrate why the use of LID approaches is not possible. See the Definitions section for an explanation of Low Impact Development.

~~The calculation of new impervious surface area may be offset through the removal of existing impervious surface in other areas of the site. Such an offset shall be calculated on a 1:1 area basis – new impervious vs. existing impervious removed. Such an offset shall be contingent on substantially better stormwater infiltration for the area where existing impervious surfaces were removed. This may require the replacement of sub-base material in addition to surface materials.~~

Small Projects & Redevelopment:
Development in the Village Growth Area requiring site plan review that creates less than 10,000 square feet of impervious surface shall address stormwater control and treatment. Such development is encouraged but not required to follow the latest State standards and the special standards described above. This includes projects that modify or reconfigure stormwater runoff patterns, even if no new impervious surface is created. These small and/or redevelopment projects shall still ensure stormwater treatment and control, including proper design solutions for steep slopes (15% or greater) and poorly drained areas. Low Impact Development practices are strongly encouraged for such projects.

Evidence of a State stormwater permit approved using the standards contained in the latest version of the State stormwater manual will constitute compliance with this Small Projects & Redevelopment section. For projects with older State stormwater permits (i.e., approved under an earlier version of the State stormwater manual) or no State stormwater permit, incremental development or redevelopment shall include at least proportional improvements in stormwater control and treatment. Although Low Impact Design practices are strongly encouraged, specific control/treatment practices are not prescribed. Improvements shall be site specific, opportunity-based, and designed to address one or more of the five State stormwater manual standards listed above in the following qualitative increments:

Area Impacted (sq. feet)	Degree of Improvement Required
0-1,000	Minor - e.g., gutters w/ rain barrels, small rain gardens, re-vegetation of drainage areas, etc.
1,001-5,000	Moderate – e.g., larger rain gardens, woody vegetation plantings around drainage areas and/or in stream buffer areas, minor grading or site manipulation to remedy direct discharge to streams and other water bodies, installing pervious driveway, parking, pathways, etc.
5,001-10,000	Substantial – e.g., measures described above but implemented in combination and/or more extensively, infiltration areas (dry wells for roof gutter discharge, infiltration swales), detention ponds, underground stormwater storage systems.

~~Low Impact Development (LID)~~
~~For all development requiring a stormwater control plan (i.e., new impervious surface of 10,000 square feet or more), the use of LID design approaches shall be implemented taking into consideration the site's soil characteristics, slope, and other relevant factors. To the extent that LID design approaches are not proposed in the stormwater management plan, the applicant shall provide a full justification and demonstrate why the use of LID approaches is not possible.~~

~~See the Definitions section for an explanation of Low Impact Development.~~

Independent Consultants:
This language will be added to both the Zoning Regulations and the Subdivision Regulations to clarify that the DRB may hire an independent consultant to assist in the review of application materials, and that this review or "fact checking" would be paid for by the applicant. This is already authorized in our current Subdivision Regulations, but not in our Zoning Regulations. Note – this will help with review of stormwater control plans, but will also help more generally so that taxpayers aren't paying for these independent reviews.

- *Subdivision Regulations – REVISES section 7.2*
- *Zoning Regulations – NEW section under Article 5 – General Provisions*

The DRB may retain independent consultants to facilitate the review of applications. These services shall be paid for by the applicant. The consultant(s) shall work at the DRB's direction and shall provide the DRB such reports and assistance, as the DRB deems necessary to determine compliance with this bylaw. The scope of the independent review shall be as narrow as possible, and the cost shall be minimized to the extent practical. The applicant shall be notified as to the choice of the consultant(s) and the estimated cost prior to the independent consultant(s) starting work.

Definitions:
The following definitions will be added to both the Zoning Regulations and Subdivision Regulations.

<u>Impervious Surface</u> – Areas that are covered by buildings, structures and other man-made improvements, including parking and loading areas, access roads and drives (paved or gravel), sidewalks, patios, and other impermeable surfaces that prevent the infiltration of stormwater into the ground. Decks that allow water through the structure into pervious ground below shall not constitute impervious surface. Engineered or manufactured surfaces that do not consist of soil shall be considered impervious (even if they allow some infiltration) unless otherwise approved by the Development Review Board or Zoning Administrator.

<u>Low Impact Development (LID)</u> – Low Impact Development practices are a set of site development techniques designed to reduce the amount of stormwater runoff and associated pollutants leaving a site. LID practices reduce impacts by mimicking existing drainage patterns and retaining stormwater runoff onsite, commonly allowing for infiltration of precipitation into the underlying soil media. Successful implementation of LID strategies will reduce the total volume and peak flow rates of stormwater runoff generated at a site. It can also reduce the need for traditional stormwater treatment facilities (e.g. detention ponds). LID practices are typically small in scale and dispersed throughout a development site to provide treatment near the area of runoff generation.

Rather than relying on traditional stormwater management practices that are costly to construct and often consume valuable land, LID practices reduce the total amount of stormwater generated, thereby promoting hydrologic characteristics similar to pre-development conditions. Terms such as green infrastructure, conservation design, and

sustainable stormwater management are often used synonymously with LID practices. All of these concepts support the use of small-scale, localized facilities that often incorporate the use of vegetation, open space and other natural processes to provide for natural infiltration and the reduction of subsequent stormwater volume, flow rate and pollutants. For more information and LID design guidance:

- City of South Burlington "Low Impact Development Guidance Manual" (originally published May 2009) - http://www.sburlstormwater.com/download-material
- US Environmental Protection Agency LID website - http://water.epa.gov/polwaste/green
- VT Department of Environmental Conservation, Watershed Management Division's Green Infrastructure website - http://www.vtwaterquality.org/stormwater/htm/sw_green_infrastructure.htm

See the following PC meeting minutes for substantive discussion: 4/10/13, 9/11/13, 10/9/13, 2/12/14, 3/26/14, 4/9/14, 4/23/14, 5/14/14, 7/23/14, 8/13/14, 8/27/14, 9/24/14, 10/8/2014

See the following Selectboard meeting minutes for substantive discussion: 3/16/15, 4/6/15, 4/20/15