

## 10.24 Storm Water Management

A. The following general and specific shall apply:

(1.) General Standards.

- (a.) When possible, existing natural drainageways, wetlands, and vegetated soil surfaces must be used to convey, store, filter, and retain storm water runoff before discharge to public waters.
- (b.) Development must be planned and conducted in a manner that will minimize the extent of disturbed areas, runoff velocities, erosion potential, and reduce and delay runoff volumes. Disturbed areas must be stabilized and protected as soon as possible and facilities or methods used to retain sediment on the site.
- (c.) When development density, topography features, and soil and vegetation conditions are not sufficient to adequately handle storm water runoff using natural features and vegetation, various types of constructed facilities such as diversions, settling basins, skimming devices, dikes waterways, and ponds may be used. Preference must be given to designs using surface drainage, vegetation, and infiltration rather than buried pipes and man-made materials and facilities.
- (d.) Landowners may only drain surface water upon neighboring land if they act in good faith and;
  - i. There is a reasonable necessity for the drainage;
  - ii. Care is taken to avoid unnecessary injury to the neighboring land;
  - iii. The utility or benefit accruing to the drained land outweighs the gravity of the harm resulting to the burdened land; and
  - iv. The drainage is accomplished by reasonably improving and aiding the natural drainage system, or if, in the absence of a practical natural drain, a reasonable and feasible artificial drainage system is adopted.

(2.) Specific Standards.

- (a.) Impervious surface coverage of lots must not exceed twenty-five (25) percent of the lot area or twenty (20) percent of the lot area in Natural Environment Shoreland Zoning. For the purposes of this section, twenty-five (25) percent of the total area covered by pervious paver

systems designed to allow the infiltration of water between pavers may be considered pervious by conditional use permit provided that:

- i. The pervious pavement system shall be designed and certified by a registered engineer or landscape architect and installed by someone qualified in the particular system used, or the installation shall be overseen by a product representative to ensure its proper long-term function;
  - ii. The pervious pavement designer shall include maintenance instructions to the property owner along with a maintenance schedule, with a copy to the Land & Resource Office to be filed along with the permit;
- (b.) When constructed facilities are used for storm water management, documentation must be provided by a qualified individual that they are designed and installed consistent with the field office technical guide of the local soil and water conservation districts.
- (c.) New constructed storm water outfalls to public waters must provide for filtering or settling of suspended solids and skimming of surface debris before discharge.
- (d.) Impervious Surface Replacement.
- i. Purpose: The purpose of the regulations in this subsection is to prevent excessive amount of runoff that will be generated during a rainstorm by an enlarged impervious area. Such excessive runoff causes erosion and transport of pollutants to public waters there by degrading water quality. Existing properties exceeding the standards for impervious surface coverage present a distinct management challenge from that of newly developed properties and there is a need to establish clear and consistent guidelines for how re-development of these lots may occur.
  - ii. Standards: Parcels that exceed the maximum allowed impervious surface may construct additional impervious surfaces without a variance or conditional use permit if the proposed new impervious surface meets all setbacks, height and other regulations of this ordinance and if one of the two following conditions are met:

1. The applicant removes existing impervious surfaces at a ratio of one and one-half (1.5) square feet removed for every one (1) square foot added and restores these areas to a permeable surface.

a. Permeable pavement systems are encouraged in the management of sites currently over the impervious surface limit and shall be credited as twenty-five (25) percent pervious for these sites when installed according to the requirements of Section V.L.4.a.(2)(d)iii. Applicants are encouraged to replace existing impervious surfaces with natural vegetation at the 1.5 to 1 ratio listed above, however, permeable pavement systems may also be used. In these cases they are to replace existing impervious surfaces at a ratio of at least four (4) square foot of new impervious surface being added;

2. The applicant removes existing impervious surfaces at a 1:1 ratio and restores those areas to a permeable surface and in addition, submits a comprehensive stormwater management plan that emphasized infiltration and onsite retention of stormwater for at least the two year 24-hour storm even through a combination of methods including buffer strips, swales, rainwater gardens, permeable pavement systems and other low impact development methods. The stormwater management plan must be designed by a registered engineer or landscape architect and installed as designed by a qualified professional.

a. Permeable pavement systems may be considered as 100% pervious when submitted as part of a stormwater management plan consistent with this section.

iii. Specific Requirements: The applicant must provide the following evidence, in conjunction with meeting one of the two standards listed in (d)ii. above:

1. A survey shall be submitted showing calculations of the exact dimensions of all existing impervious surfaces and of the lot before and after completion of the project. This survey must be submitted and approved by the Land &

Resource Director before any work may begin on the project;

2. In replacing existing impervious surfaces with surfaces designed to be permeable or porous, the applicant must give priority to replacing those surfaces closest to the lake or those surfaces where the replacement is most likely to improve storm water management.
3. No pervious or porous pavement systems shall be allowed in a bluff impact zone or shore impact zone unless specifically approved otherwise by the Land & Resource Director when restoration to natural vegetation would not be practical or advised by a qualified engineer. These areas shall be maintained or restored to natural vegetative buffer whenever feasible;
4. A pervious pavement system shall be designed and certified by a registered engineer or landscape architect and installed by someone qualified in the particular system used, or the installation shall be overseen by a product representative to ensure that is proper long-term function;
5. A pervious pavement system shall be set back from structures having basements, septic system leach fields, steep slopes and wells at least 10 feet unless otherwise designed by a registered engineer so as to prevent impacting these features;
6. A pervious pavement designed shall include maintenance instructions to the property owner along with a maintenance schedule, with a copy to the Land & Resource Office to be filed along with the permit;
7. All best management practices must be compatible with local stormwater management plans and NPDES Phase II stormwater permits, where required.
8. If, in the removal of existing impervious surfaces, the total lot coverage falls below the maximum coverage allowed by this ordinance, the applicant must thereafter conform to the standards of this ordinance.

