

## Impervious Area Conversion

Converting impervious surfaces (pavement, buildings, etc.) to pervious vegetated surfaces (lawn, meadow, woods) and restoring the pre-development infiltration rate and storage capacity (i.e., porosity) of the underlying soils can be an effective strategy for reducing existing impervious cover on redevelopment sites. Conversion of the impervious surface to a pervious vegetated surface results in a reduction in runoff volume and pollutant loads and an increase in infiltration and groundwater recharge.

The subgrade below pavement is often highly compacted, with low infiltration and water storage capacity, and lacking organic material in the soil structure to support vegetative growth. An important aspect of converting impervious surfaces to pervious vegetated surfaces is to ensure that the converted area has similar hydrologic functions and characteristics as a natural, undeveloped area in terms of runoff and infiltration. This typically requires modification of the underlying soils to restore the pre-development infiltration rate and soil porosity and improve soil quality to support vegetation.

### Credit Description

An impervious area conversion credit is available when an existing impervious surface is converted to a pervious vegetated surface and the pre-development infiltration rate and storage capacity of the underlying soils is restored.

If the impervious area conversion meets the minimum criteria presented below, the converted area can be deducted from the total impervious area, reducing the required Water Quality Volume and Required Retention Volume and the size of the structural stormwater BMPs needed to meet the static storage volume and pollutant reduction requirements of Standard 1.

### Minimum Criteria for Credit

The impervious area conversion credit is subject to the following minimum criteria and restrictions:

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- The existing impervious surface must be replaced with a pervious vegetated surface (lawn, meadow, woods) to provide natural or enhanced hydrologic functioning.
- The soils beneath the previously paved surface, which are typically highly compacted, must be modified to restore the pre-development infiltration rate and porosity (similar to that of the native underlying soils) and improve the soil quality to support vegetation. The subgrade must be treated by scarification, ripping (tilling), or use of a shatter-type soil aerator to a depth of 9 to 12 inches or more depending on site and soil conditions.
- Soil testing is required (by the University of Connecticut Soil Testing Laboratory, another university soil testing laboratory, or a commercial soil testing laboratory) to determine the suitability of the soils for plant growth and to classify the permeability (in terms of Hydrologic Soil Group) of the restored pervious area. Amendment with 2 to 4 inches of topsoil or organic material may be required to improve plant establishment or restore soil permeability.
- Impervious area conversion should not be used where subsurface contamination is present from prior land use due to the increased threat of pollutant migration associated with increased hydraulic loading from stormwater infiltration, unless the contaminated soil is removed and the site is remediated, or if approved by CT DEEP on a case-by-case basis.