

# Treated Impervious Surface Worksheet

State law allows impervious surfaces to be excluded from impervious surface (IS) calculations if they are infiltrated or treated in compliance with the standards outlined below.

## Treated Impervious Surface (TIS) Standards

### *Exclusion Standards*

The County may exclude an impervious surface from the IS calculation provided the property owner can demonstrate that one or more of the following general standards apply, and that all applicable stormwater BMP technical standards are met:

1. One half inch of runoff from the impervious surface is treated by a stormwater BMP\*; or
2. One half inch of runoff from the surface is discharged to an internally drained pervious area\* that retains the runoff on or off the parcel to allow infiltration into the soil.

\*The stormwater treatment or infiltration system shall comply with an adopted County or State post-construction stormwater management technical standard or guidance document, such as [http://dnr.wi.gov/topic/stormwater/standards/postconst\\_standards.html](http://dnr.wi.gov/topic/stormwater/standards/postconst_standards.html).

### *Calculation for Exclusion Standards*

The calculation of the runoff volume (in cubic feet) equals the IS to be excluded (in sq. ft.) multiplied by the runoff depth (1/2 inch or 0.04 ft.).

Treated Impervious Surface \_\_\_\_\_ sq. ft. x 0.04 ft. = \_\_\_\_\_ cubic feet (runoff volume that must be treated)

**OR**

Area of Pervious Surface \_\_\_\_\_ sq. ft. (calculation not required if 100% infiltration rate applies)

### *Permitting Standards*

A *Stormwater Permit* shall be issued by the Waukesha County Land Resources Division (262-896-8300) and the following requirements shall be met:

- The treated impervious surface exclusion standards shall be met.
- All technical standards of the Waukesha County Stormwater Management and Erosion Control Ordinance shall be met\*. A qualified professional may be required to prepare any necessary plans.
- A financial guarantee must be submitted to ensure that the stormwater BMP is installed correctly.
- The obligations and long-term maintenance requirements of the current and future property owners shall be evidenced by an instrument (Deed Restriction) that is reviewed and approved by the Waukesha County Land Resources Division and recorded in the Office of the Waukesha County Register of Deeds.

### **OFFICE USE ONLY**

#### *Authorizations Required*

Zoning Administrator approval of TIS calculation \_\_\_\_\_ Date \_\_\_\_\_

- Include Preliminary Site Plan. Plan Date \_\_\_\_\_

LRD Engineer approval of site plan with BMP \_\_\_\_\_ Date \_\_\_\_\_

- Include Site Plan with BMP clearly identified Plan Date \_\_\_\_\_

Zoning Administrator approval of site plan with BMP\* \_\_\_\_\_ Date \_\_\_\_\_

*\*only if BMP not shown or modified on original Site Plan)*

LRD Engineer FINAL approval (all permitting standards met) \_\_\_\_\_ Date \_\_\_\_\_

- Stormwater Maintenance Agreement Document # \_\_\_\_\_

## Types of Stormwater Treatment Practices

### Summary for Owners Needing to Treat Runoff from Impervious Surfaces

The following is a brief synopsis of kinds of stormwater Best Management Practices (BMPs) used in single-family residential properties. A common rule of thumb is that the first ½-inch of runoff contains most of the pollutants that are washed off impervious surfaces. What these BMPs have in common is that they are all designed to capture that “first flush” of runoff, infiltrate that volume into the soil, and leave the pollutants trapped in the surface of the soil. The State of Wisconsin has published design standards for these BMPs on the following web page:

[http://dnr.wi.gov/topic/stormwater/standards/postconst\\_standards.html](http://dnr.wi.gov/topic/stormwater/standards/postconst_standards.html)

An important first step in selecting and designing any BMP is examining the soils in the area where the BMP is proposed, in order to evaluate whether the soils are sufficiently infiltrative at that location and depth. BMPs must generally be at least 8 feet from a well.

BMP	Description	Notes
Rain garden	A shallow depression, generally about six inches deep, typically planted with deep-rooted native vegetation.	<ul style="list-style-type: none"> <li>◦ Can be aesthetically pleasing, with plants blooming from June-October.</li> <li>◦ Vegetation requires some maintenance, primarily weed suppression.</li> </ul>
Permeable pavement	May be pavers with gaps between the blocks, or concrete or asphalt constructed with pores that allow water to trickle through to a stone base where the water is stored temporarily.	<ul style="list-style-type: none"> <li>◦ Gaps or pores must have accumulated sediment removed, usually annually, using industrial vacuum.</li> <li>◦ Concrete and asphalt require special skills to construct correctly.</li> <li>◦ Pavers can be laid decoratively.</li> </ul>
Infiltration trench	Shallow, stone-filled trench.	<ul style="list-style-type: none"> <li>◦ Must be kept free of sediment that can seal the infiltration surfaces.</li> </ul>
Grass swale	Flat-bottomed ditch with gentle slope (<4%). Runoff soaks into soil as it flows through swale.	<ul style="list-style-type: none"> <li>◦ Soil must not be compacted during construction.</li> <li>◦ Takes up space.</li> </ul>
Green roof	Soil planting bed or trays of growing media placed on flat or low-slope roof. Growing media retains some rain. Vegetation absorbs moisture. Some roofs are showpieces.	<ul style="list-style-type: none"> <li>◦ Roof must be designed to support weight of wet growing media.</li> <li>◦ The thicker the growing media, the greater the variety of vegetation that can be grown.</li> <li>◦ Thinnest growing media only support sedums.</li> </ul>

Other BMPs that may be used include: constructed wetlands; bioretention basins; and wet detention basins. There are technical standards for bioretention and wet detention, found in the link, above. These three practices remove pollutants but typically do not significantly reduce runoff volumes.