# Frequently Asked Questions—Landscaping for Stormwater Management

Land use requirements in Crosslake are governed by the specific provisions of the City of Crosslake's Land Use Ordinance, which is available on our website @ www.cityofcrosslake.org. Article 20 specifies the stormwater management requirements of the Ordinance. Also, please refer to the *Impervious Surface Coverage & Landscaping for Stormwater Worksheet* along with the *Stormwater and Temporary Erosion & Sediment Control BMPs* as part of the City's *Stormwater Packet.* Feel free to contact our office with any questions.

1. **What is stormwater?**
   Stormwater is rain water than does not soak into the ground during a precipitation event and typically runs off from hard (or "impervious") surfaces such as roofs, driveways, sidewalks, patios, and also lawns into nearby receiving water bodies. It is a concern because of the volume of water & sediment washed into downstream water bodies as well as the pollutants (such as gasoline, oils, heavy metals, trash) and nutrients carried by this runoff. Phosphorus is one nutrient often found in stormwater runoff and is especially common on fertilized lawns. In lakes or rivers, 1 pound of phosphorus can produce 300-500 lbs of algae growth.

2. **Why does the City of Crosslake regulate stormwater?**

   Stormwater management is one of the most important things that can be done to keep our lakes and rivers clean. The purposes of stormwater management in Crosslake are:
   - To protect surface waters and private property from damage resulting from stormwater runoff and erosion
   - Ensure the annual stormwater runoff rates and volumes from post-development site conditions mimic the annual runoff rates and volumes from predevelopment site conditions
   - Ensure site development minimizes the generation of stormwater and maximizes stormwater treatment and infiltration onsite
   - Protect water quality from nutrients, pathogens, toxins, debris, and thermal stress

3. **When is stormwater management required?**

   For residential property, the City of Crosslake Land Use Ordinance allows up to 25% of the total lot area, excluding road right-of-way area, to be comprised of hard surfaces (i.e. "impervious"). If the percentage of impervious surface is greater than 15%, a stormwater management plan is required.

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*This document is intended to assist our customers in answering frequent questions about land use requirements in Crosslake. Please note that this guide is only a summary and not intended as a legal authority on specific land use requirements.*

**Contact us at (218) 692-2689 or crosslakepz@cityofcrosslake.org**

**Visit our website: www.cityofcrosslake.org**

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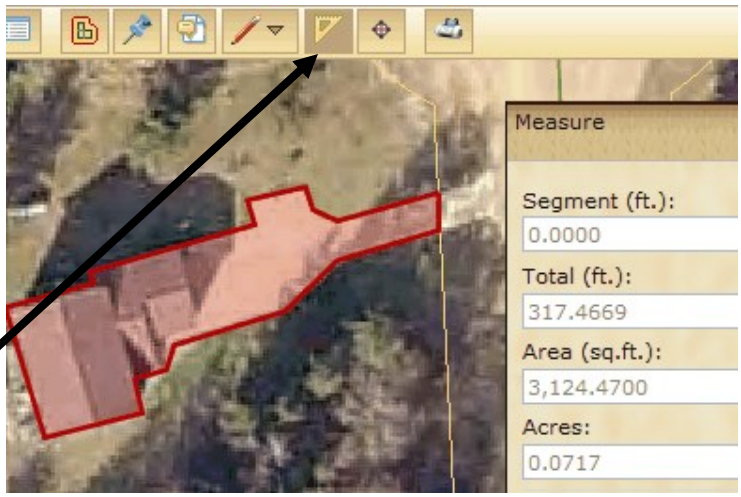
4. **How do I calculate my impervious surface coverage?**

The City of Crosslake has provided an *Impervious Surface Coverage & Landscaping for Stormwater Worksheet* to assist in calculating the amount of impervious surface coverage on an individual lot. In addition, the interactive *Link* GIS mapping application on the Crow Wing County website www.crowwing.us has 2013 high-resolution aerial photos along with a measure tool (shown in the graphic to right) that can be used to calculate impervious surface area.




**Measure tool**

5. **How much stormwater runoff must be treated?**

All Stormwater plans shall be designed for permanent on-site treatment of one inch of stormwater runoff on all impervious surface coverage on the lot. This means that a volume of water equal to one inch multiplied by the area of impervious surface must be treated. For example, 2500 sq. ft of impervious / 12 (in/ft) = 208.3 cubic ft of storage. To store 208 cubic ft means that a 12" deep stormwater BMP would also be 208 square ft in size. A 6" deep BMP would need to be twice as large (416 sq. ft). This information can be computed using the *Impervious Surface Coverage & Landscaping for Stormwater Worksheet* found on the city of Crosslake website *(*Impervious Calculation Worksheet*)*

6. **What methods of treatment are allowed?**

Crosslake prefers that stormwater runoff be managed onsite where feasible. Berms, rain gardens, infiltration basins, and swales are often easier to install, less expensive, look better, and can work as well as ponds, pipes, and larger conveyance systems. In addition, directing runoff to existing natural depressions, drainage ways, and vegetated soil surfaces is a simple way to treat runoff and prevent erosion. A number of different approaches may be necessary given lot constraints and topographic limitations.

7. **What is required on a stormwater plan?**

The City of Crosslake *Impervious Surface Coverage & Landscaping for Stormwater Worksheet* includes room for the applicant to draw the existing and proposed impervious surfaces along with contours, drainage arrows, and the location of stormwater BMPs (along with sizes and setback distances). Existing natural stormwater treatment areas should also be shown and can be included in your plan. Example plans are also available in the City's *Stormwater Packet* . All plans are approved by the City of Crosslake. Follow-up inspections will be conducted to verify that they are effectively implemented.

**Protect your investment!!!**

BMP's used in conjunction with your building plans often can be incorpo-