

# Shoreland Impervious Surface Calculations

Riparian lots or properties entirely within 300' of the Ordinary High Water Mark



## Why regulate impervious surfaces on shoreland lots?

The purpose of Marathon County's Shoreland Impervious Surface Standards is to protect water quality and fish and wildlife habitat, and to prevent pollution of navigable water. The greater amount of impervious surfaces on a lot, the greater impact it has on fish, wildlife, water quality, and property values.

Virtually any form of shoreland development leads to more impervious surfaces, which are hard, manmade surfaces such as roof tops, driveways, parking areas, and patios. The runoff that occurs from these surfaces carries sediment, nutrients, and other pollutants into our waterbodies leading to decreased fish populations, water quality, and habitat. It's up to us as landowners to make sensible development decisions to ensure that our public resources are maintained and protected.

## Options for treating impervious surfaces that exceed 15% but are less than or equal to 30% of the lot size.

In some situations a proposed building project will increase the impervious surface limit over the recommended 15%. In these situations the land owner has two options to mitigate the 'extra' impervious surfaces on their property.

### Option #1: Treat individual impervious surface items to lower the percentage of impervious surface on the lot.

Impervious surfaces can be treated by installing devices such as stormwater ponds, constructed wetlands, infiltration basins, rain gardens, bio-swales or other engineered systems. For example: If the total impervious surface coverage of a lot is over 30% a raingarden can be installed to collect runoff from a certain impervious item. That specific impervious item will be subtracted from the total impervious calculation since the runoff is being treated by the raingarden.

### Option #2: Implement three of the four mitigation practices.

#### 1. Remove all non-conforming structures.

Removal of all non-conforming accessory structures located in the shore setback area. This requirement does not apply to detached garages that are located at least as far from the Ordinary High Water Mark as the principle structure.

#### 2. Establish a vegetated buffer.

Plant and establish native shrubs, trees, and groundcover to restore natural conditions along the shoreline.

#### 3. Evaluate and upgrade the private onsite waste treatment system (POWTS).

The POWTS system must be evaluated and upgraded as appropriate to be in compliance with COMM83, Wis. Administrative Code.

#### 4. Establish a stormwater practice.

Rain gardens, water diversion of overland flow practices, etc.

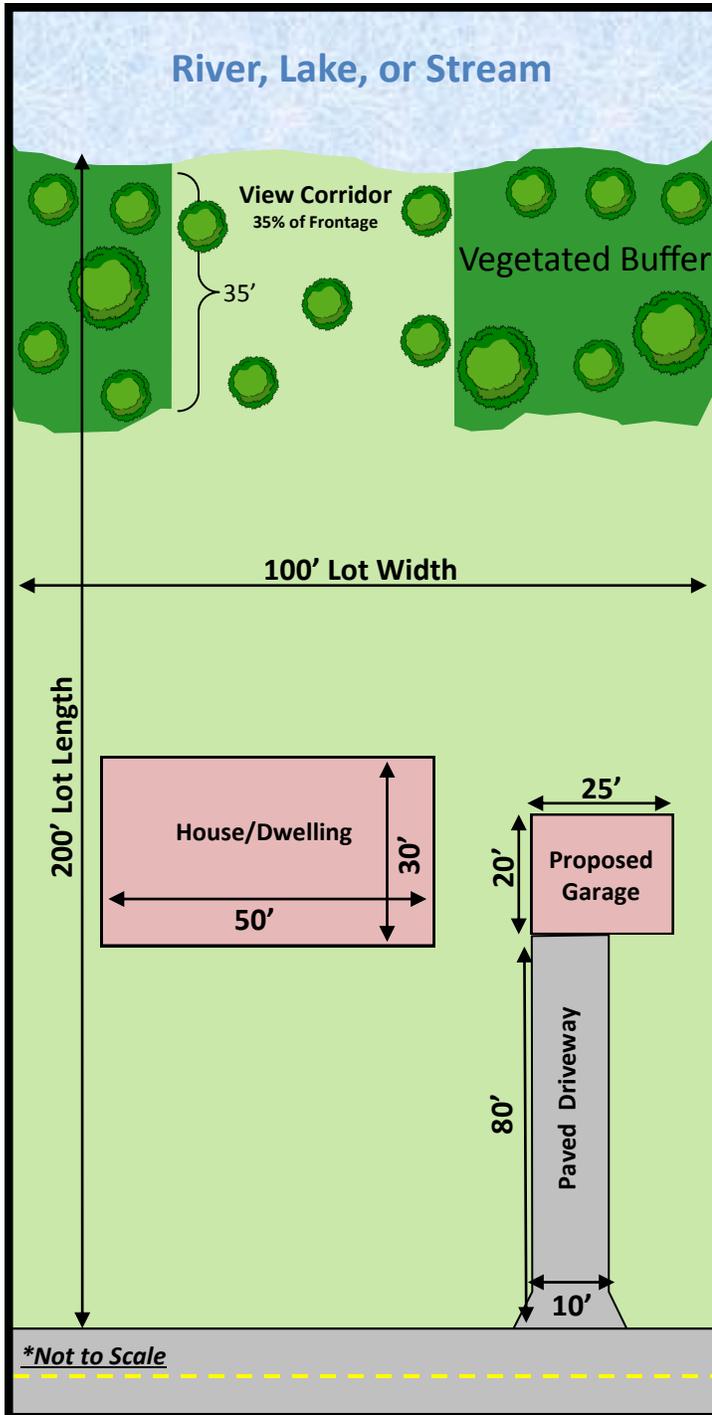
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#### Conservation, Planning & Zoning Department

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## How do I calculate total impervious surfaces?

Impervious surfaces are those that water will run off. This includes: roofs, paved areas such as driveways, sidewalks and patios, and compacted areas such as graveled driveways, walkways, and play areas. To calculate the percent of impervious surfaces on your lot: divide the total square footage of impervious surfaces by the total square footage area of your lot then multiply by 100. See the example below as a reference.

Impervious Surface Item	Dimensions	Surface Area (ft <sup>2</sup> )
House/Dwelling	Length 30' x Width 50'	1,500ft <sup>2</sup>
Proposed Garage	Length 20' x Width 25'	500ft <sup>2</sup>
Paved Driveway	Length 80' x Width 10'	800ft <sup>2</sup>
<b>Total Impervious Area</b>		<b>= 2,800ft<sup>2</sup></b>

**Total Impervious Area (ft<sup>2</sup>): =2,800ft<sup>2</sup>**

**Total Lot Area (ft<sup>2</sup>): =20,000ft<sup>2</sup>**

**$(2,800ft^2) \div (20,000ft^2) \times 100 = 14\%$  Impervious**

Total Impervious Area ÷ Total Lot Area x 100 = Impervious Surface Calculation

Property in Acres? Here's the formula to convert acres to square feet.

$(Property\ Acreage) \times (43,560) = Total\ Lot\ Area\ in\ Ft^2$

### Conservation, Planning & Zoning Department

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PARCEL PIN# \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
(From Tax Bill - Include All Zeros and Decimal Points)

Permit# \_\_\_\_\_  
(FOR OFFICE USE ONLY)

Name of Owner \_\_\_\_\_

Address of Project Site \_\_\_\_\_

## Calculating the percent of impervious surfaces on your lot:

Impervious surfaces are those surfaces that water will run off. They include roofs, paved areas such as driveways, sidewalks and patios, and compacted areas such as graveled driveways, walkways, and play areas. Please fill in the information that is applicable to your project below and calculate the percent of impervious areas within your lot.

- House/Dwelling (square footage of roof) \_\_\_\_\_ Ft<sup>2</sup>
- Driveway(s), i.e. concrete, pavers, gravel or other compacted areas \_\_\_\_\_ Ft<sup>2</sup>
- Parking pads(s), concrete, pavers, gravel or other compacted areas \_\_\_\_\_ Ft<sup>2</sup>
- Walkway(s), concrete, pavers, gravel or other compacted areas \_\_\_\_\_ Ft<sup>2</sup>
- Patio(s), (including wood slatted decks) \_\_\_\_\_ Ft<sup>2</sup>
- Outbuilding 1 (square footage of roof and slabs) \_\_\_\_\_ Ft<sup>2</sup>
- Outbuilding 2 (square footage of roof and slabs) \_\_\_\_\_ Ft<sup>2</sup>
- Other Impervious Areas ( \_\_\_\_\_ ) \_\_\_\_\_ Ft<sup>2</sup>
- Other Impervious Areas ( \_\_\_\_\_ ) \_\_\_\_\_ Ft<sup>2</sup>
- Other Impervious Areas ( \_\_\_\_\_ ) \_\_\_\_\_ Ft<sup>2</sup>
- Total ft<sup>2</sup> of Impervious Surfaces** **Total \_\_\_\_\_ Ft<sup>2</sup>**

$$\left( \frac{\text{Total ft}^2 \text{ of Impervious Surfaces}}{\text{Total ft}^2 \text{ of Shoreland Lot}} \right) \times (100) = \boxed{\text{Total \% of Impervious Surface}}$$

FOR OFFICE USE ONLY

Reviewer Signature \_\_\_\_\_ Date \_\_\_\_\_