



IMPERVIOUS AREA INFORMATION

Within the Shoreland Overlay District, and in the Old White Bear neighborhood, the amount of impervious area per property is limited to no more than 30% of the lot area.

An impervious surface is defined as an artificial or natural surface through which water, air or roots cannot penetrate. Un-compacted gravel is not considered an impervious surface. A deck is not an impervious surface, provided there is no concrete, plastic or other impervious material underneath the deck. Anything with a roof is impervious. Putting a structure up on stilts does not make it pervious. All permanent pools are considered impervious. The City has a worksheet to assist with calculating the impervious area of a property.

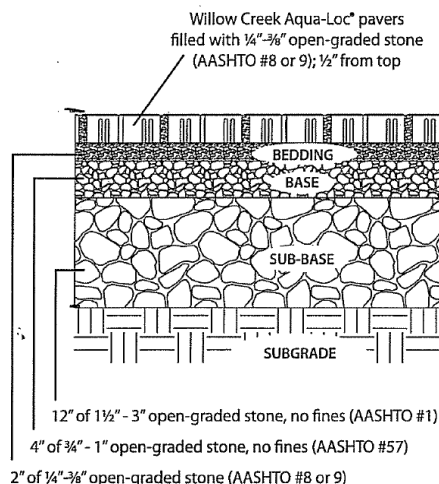
For single-family and two-family uses only, staff may administratively grant an impervious surface “credit” for the use of pervious pavers, porous asphalt, porous concrete, netpave, rain gardens, trench drains or other engineered storm water infiltration systems. The credit granted may vary depending on specifications of the system but may not exceed 50% of the surface area of a porous hard-surface system. For other types of systems, the system must be designed to infiltrate at least twice as much run-off as the additional hard-surface area generates, based on the 1.1-inch rain event and not accounting for ground absorption if traveling over pervious area to get from the hard-surface to the system. The surface area of a porous hard-surface system may not exceed 25% of the total lot area, and the overall coverage of the site may not exceed 50%. The final surface and sub-grade design of an engineered infiltration system is subject to approval by the City Engineer.

At the time of submittal, we will need to see:

- A location map, showing where on the property the system is proposed to be located;
- The design of the system, including cross-sectional drawings, if applicable; and
- The infiltration calculations.

Porous Paver Tips: The subgrade design of pavers should be tailored to suit the proposed use. For example, the sub-grade design of pavers in a sidewalk will be less industrial than that for a residential driveway or a commercial parking lot.

Bio-Aquifer Storm System *Typical Commercial Installation*



The sub-grade design of the pavers should be tailored to suit the property. If the soils are not sandy, thicker layers or an additional layer may be needed. In addition, tapering of the layers may be needed if the area where the pavers are to be used is sloped. Also, a filter fabric is typically used beneath the sand bedding.

Finally, at the time of installation, it is recommended to purchase a dozen or so more than needed. This is because the pavers may need replacing over time (due to repeated plowing and frost heaving over many winters) and 20-30 years from now, they may not make that particular style of paver anymore. Alternatively, if they do make it, the batch might come out a slightly different color than the batch originally bought and the repair would look patchy.

Rain barrels may not be used to offset impervious area because they must be manually emptied after each rainfall in order to be effective. Their holding capacity is significantly less than engineered systems.