

IMPERVIOUS SURFACES AND YOUR LAKE – WHAT CAN YOU DO?

Short answers to frequently asked questions about impervious surfaces



- What is an impervious surface?
- What impacts do impervious surfaces have on water quality?
- What can I do to minimize impervious surfaces?
- What kind of walkway would be best near the shore?
- How can we protect our lake from polluted runoff?
- Who can I contact if I have questions or a problem related to impervious surfaces?
- What are some additional resources related to impervious surfaces?

What is an impervious surface?

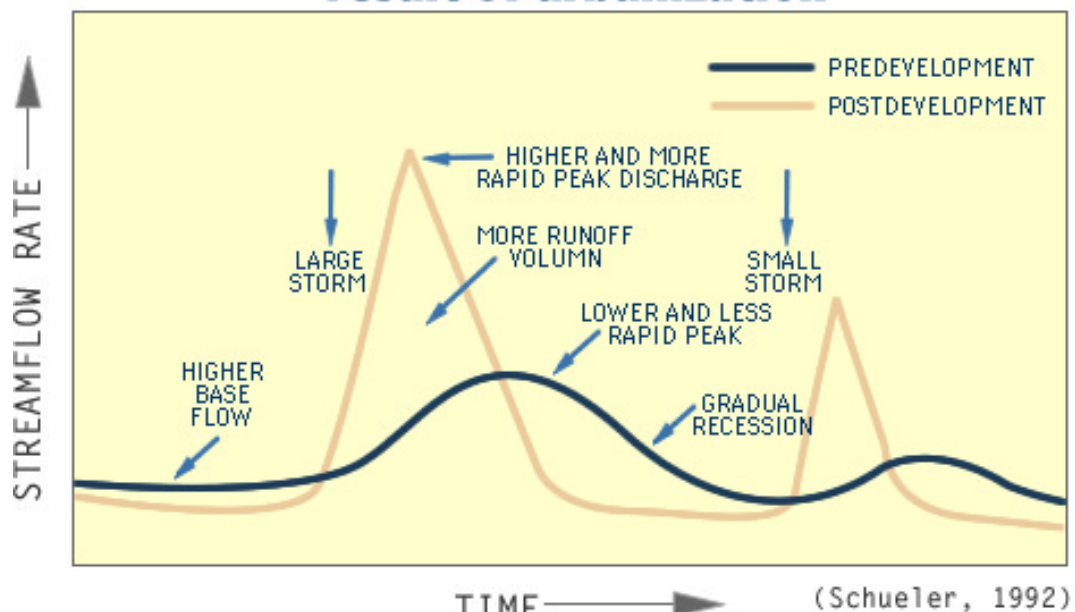
An impervious surface is any surface such as pavement, buildings, patios, and sidewalks that does not allow water to seep through to the soil below. On average, about 65% of impervious surfaces are used for roads and parking lots and the remaining 35% are buildings.

parking lots or rooftops is often much warmer than water flowing in through natural pathways and can harm aquatic plants and animals, particularly in streams. Pollutants and nutrients move quickly into surface waters when storm water and snowmelt can't percolate into the soil. Impervious surfaces also may reduce groundwater recharge

What impacts do impervious surfaces have on water quality?

When a watershed is paved, it sheds water like a raincoat. A watershed with minimal impervious surfaces absorbs water like a sponge. As a greater percentage of the area within a watershed is covered by roads and parking lots, buildings, patios, and sidewalks, the volume and velocity of storm water runoff carrying sediments, nutrients, and pollutants to lakes and streams increases. This not only affects water quality but also can increase flooding and erosion. Water flowing into streams and lakes from

changes in stream hydrology as a result of urbanization



and promote “flashy” streams (water levels fluctuate rapidly, causing flooding).

What can I do to minimize impervious surfaces?

Water is channeled from buildings, roads, parking lots, and sidewalks into gutters or directly into lakes or rivers. Careful landscaping in your yard, near roads and driveways, and along shorelines will help reduce the amount of runoff flowing directly into lakes or rivers or through storm sewers. Minimize the amount of hard surfaces or covered areas that prevent water from seeping into the ground. For example, use gravel instead of asphalt or concrete for driveways and walkways. Choose stepping stones or patio blocks instead of solid concrete sidewalks and patios. Divert rain from paved surfaces into gravel-filled trenches or areas of vegetation to collect water and allow it to filter gradually into soils. Direct flow from drain spouts and roof gutters into water gardens or rain barrels instead of directly down the sidewalk or driveway. Vegetated shoreland buffer zones by the water's edge reduce the amount and force of the runoff from impervious surfaces reaching the lake. Vegetation also helps by intercepting rainfall before it reaches impervious surfaces.

What kind of walkway would be best near the shore?

Wood decking, bricks, bark mulch, or interlocking stones set in sand make good walkways and patios. These walkways allow water to filter into soil more readily than concrete or asphalt. Walkways and paths should follow the natural contour of the land to minimize erosion. Well-worn paths that are bare of vegetation often have soils that are so compacted that they act like asphalt, channeling water into a fast-moving stream. If you choose to use wood decking, buy untreated, rot-resistant wood such as cedar or redwood. Treated wood contains toxic chemicals that can leach out of the wood and impact your lake. Your city, township, or county may regulate docks and piers, so check with them before purchasing or building one. Also, check with your local zoning officials since most zoning ordinances restrict the amount of impervious surface allowed near shore. If you need to remove vegetation or move more than 10 cubic feet of soil to create a walkway to the water or a dock, check with the Minnesota Department of Natural Resources, Division of Waters.

How can we protect our lake from polluted runoff?

Properly planned shoreland development projects allow water and its associated nutrients, sediments, and contaminants to seep into the ground or adsorb to the soil before they reach the water. A buffer strip of vegetation along the shoreline helps filter sediments and nutrients before they reach the water. A network of diversions, terracing, and contouring can help control runoff problems.

Who can I contact if I have questions or a problem related to impervious surfaces?

Check your local telephone listing, the “Who to Contact” section of the Minnesota Shoreland Management Resource Guide Web site, www.shorelandmanagement.org, or the Web sites listed below for: Board of Water and Soil Resources (BWSR)

- www.bwsr.state.mn.us

Minnesota Pollution Control Agency (MPCA)

- www.pca.state.mn.us

Minnesota Department of Natural Resources (MDNR)

- www.dnr.state.mn.us

Natural Resources Conservation Service (NRCS)

- www.mn.us.usda.gov

Minnesota Erosion Control Agency (MECA)

- www.meca.state.mn.us

What are some additional resources related to impervious surfaces?

Lakescaping for Wildlife and Water Quality. 1999. C.L. Henderson, C.J. Dindorf, and F.J. Rozumalski, Minnesota Department of Natural Resources

A Guide for Buying & Managing Shoreland. 1988. Minnesota Department of Natural Resources, Division of Waters

Streambank Erosion...Gaining a Greater Understanding. 1991. Minnesota Department of Natural Resources, Division of Waters

Shorelandscaping: A Guide for Waterfront Property Owners. 1994. M. Dresen, Wisconsin Lakes Partnership, Stevens Point

Protecting Our Waters, Shoreland Best Management Practices Fact Sheet #8: Minimizing Runoff from Shoreland Property. 1998.

University of Minnesota Extension Service, St. Paul

Better Site Design: An Assessment of the Better Site Design Principles for Communities Implementing the Chesapeake Bay Preservation Act. 2000. www.cwp.org