

LOW IMPACT DEVELOPMENT



WHAT IS LOW IMPACT DEVELOPMENT?

Low Impact Development (LID) is an environmental and economical response to the limitations of traditional stormwater management. LID practices consist of four basic elements:

- 1) Conserving as much natural area as possible
- 2) Minimizing hard surface areas, such as streets and parking lots to improve water infiltration
- 3) Retaining storm water on-site as much as possible to reduce runoff and flooding
- 4) Encouraging rainfall to soak into the ground through permeable topsoil

LID can be implemented in new housing/commercial developments and existing housing/commercial areas. While it is easier to use LID at the start of development, **most LID practices can easily be retrofitted to accommodate existing structures.** LID pays special attention to a construction site's hydrology. Engineers carefully consider on-site storm water management and the retention of top soil, aiming to design construction projects with the lowest possible impact on the local environmental systems.

LID helps **reduce runoff of oil, hydrocarbons, and heavy metals** from parking lots and streets; it also **reduces the runoff of herbicides and excess fertilizer** from lawns, as well as **diminishing topsoil erosion.** In addition to catching chemical runoff, LID helps **minimize flood damage** through the use of more permeable surfaces, which allow for greater infiltration of water into the soil.

BENEFITS OF LOW IMPACT DEVELOPMENT



Improved water Quality: Less toxic runoff leads to healthier rivers, streams, ponds, and lakes.



Less Costly Flood Events: Because stormwater soaks into the ground, it does not rush toward and run into basements.



Restored Aquatic Habitat: Less runoff means that less sediment is carried into streams, wetlands, and lakes.



More Recreation Opportunities: With more green space, communities can develop more parks, ponds, and trails.



Improved Groundwater Recharge: Rainwater can flow through the soil into the aquifers instead of running off as discharge.



Enhanced Community Aesthetics: LID community development means less pumps, pipes, outfalls, and fenced basins and more trees, flowers, and green space.



Learn more at fbsr.org

The best way you can support our work for a cleaner Big Sioux River for everyone is to donate.

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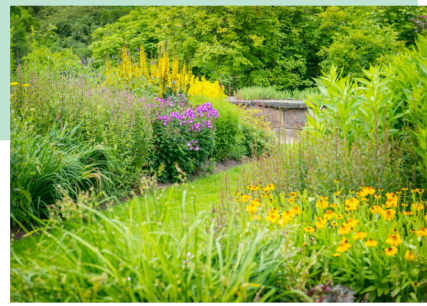


Types of Low Impact Development

Bioswales & Bioretention



Rain Gardens



Native Landscaping



Permeable Surfaces



Soil Restoration



Turf Management



USING LOW IMPACT DEVELOPMENT WORKS!

Low Impact Development is more than a theory. Case studies across the US have proven that LID reduces flooding and water pollution. According to the EPA, Seattle Public Utilities installed 12 bioretention cells, and during 235 precipitation events, stormwater was completely absorbed in 186 of the events. **That's a 79 percent success rate!** No runoff or pollution was generated during these events. In Philadelphia, two years after replacing impervious surfaces with permeable material, the **city saved an estimated \$340 million by not having to store excess sewer overflow**. Philadelphia Water Development estimates that the shift has **prevented approximately 13 tons of sediment** from reaching the local creek each year!

THE COSTS OF LOW IMPACT DEVELOPMENT

One of the struggles developers face with LID is the concern of increased costs. During initial stages of development, permeable pavers, bioswales, and other LID strategies may seem like an unnecessarily high cost to incur. **However, case studies have shown that, over the long run, LID saves communities money.**



LID reduces flooding, which means communities have reduced flooding damages and associated costs.



Bioswales, narrower roads, and smaller parking lots save money by reducing the amount of pavement, curbs, and gutters needed.



The preservation of a site's natural features, such as trees, wetlands, and native grasslands, can increase the value and sale price of lots.



In reducing the amount of impervious surfaces (driveways, parking lots) and using bioretention areas to capture runoff, communities save money by eliminating the need for costly detention basins, pipes, and pumps.