

## LID benefits for property owners and communities include:

- Increased property values
- Decreased heating, cooling and watering costs
- Decreased flooding and property damage
- Enhanced aesthetics
- Improved habitat
- Higher overall quality of life
- Higher property tax revenue
- Increased marketing potential
- A hands-on way to protect our Up North waters and increase awareness of water quality issues
- Expanded amenities, public spaces and recreational opportunities in communities that embrace LID practices



Native plants reduce erosion, filter pollutants and attract native insects and wildlife. Natural vegetation costs almost 50% less to maintain than traditional landscaping because it requires little if any fertilizers, pesticides and upkeep.



### Protecting our Up North water quality

The Watershed Center Grand Traverse Bay advocates for clean water in Grand Traverse Bay and protects and preserves its watershed.

For more information, please contact us at 231.935.1514 or visit [www.gtbay.org](http://www.gtbay.org)

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# Low Impact Development Tips for protecting freshwater resources





## What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground and impervious surfaces such as roofs, driveways, sidewalks, parking



lots and streets into streams, lakes, rivers and Grand Traverse Bay. Stormwater that does not have a chance to soak into the ground naturally carries pollutants and sediments into our local water bodies. Stormwater runoff causes flooding, erosion and contaminates water. In fact, excess nutrients and sediment are the top water quality threats to the Grand Traverse Bay watershed. Keeping pollutants and sediment out of our waterways keeps beaches healthy and protects wildlife habitat and drinking water supplies.

## What is Low Impact Development?

Low Impact Development (LID) is a set of small-scale stormwater management practices that mimic and work with nature to reduce stormwater runoff. LID strategies use things such as green space, native landscaping and other techniques to encourage water to infiltrate into the ground.

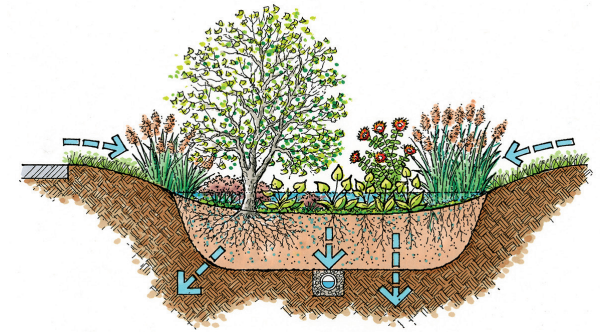
According to the U.S. Environmental Protection Agency, LID practices save substantial money for property owners, communities and developers while also improving water quality. LID methods decrease the amount of expensive below ground drainage infrastructure required and reduce or eliminate the need for other stormwater-related facilities such as curbs, erosion control measures, catch basins and outlet control structures.

## Reduce your stormwater footprint.

*Examples of LID practices include:*

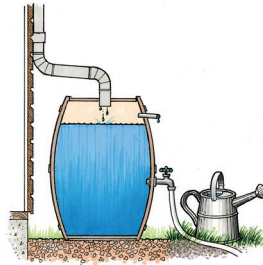
### Rain Gardens

Rain gardens are shallow vegetated depressions with native plants and soils that collect and absorb stormwater runoff. They trap and filter sediments and other pollutants, cleaning stormwater before it reaches waterways. Rain gardens are beautiful examples of something homeowners can easily construct in urban neighborhoods.



### Native Plants and Riparian Buffers

It is important to have a strip of vegetation - or buffer - along a shoreline or stream. Native flowers, trees and shrubs reduce erosion and filter pollutants. Natural vegetation costs almost 50% less to maintain than traditional landscaping because it requires little if any fertilizers, pesticides and upkeep.

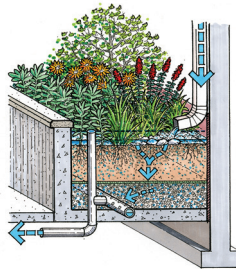


### Rain Barrels and Water Harvesting

Rain barrels are attached to downspouts and collect rain water, which can then be used to water flowers, trees and other landscape plants. Another option is to disconnect and lead your gutter drains into a vegetated area or rain garden instead of impervious areas, such as driveways and sidewalks.

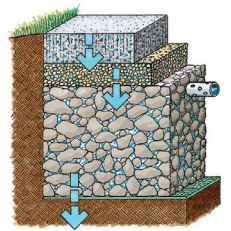
### Pervious Pavement

Pervious pavement is designed to allow percolation or infiltration of stormwater through the surface into the soil below where the water is naturally filtered and pollutants are removed.



### Flow-through Planters

Flow-through planters have impervious bottoms filled with gravel, soil and herbaceous plants to capture stormwater from roofs and sidewalks. Stormwater flows to the planters, usually from rooftops, and is stored in the planter. Excess water can be drained to the existing storm drain system.



### Vegetated/Green Roofs

A green roof is a building roof that is partially or completely covered by vegetation and soil placed on a waterproof membrane. Green roofs can be as simple as small roof gardens, or they can be extensive vegetated systems spanning the entire roof.

