



Low-Impact Development (LID) Costs, Benefits, and Maintenance

Prepared by INCOG | September 2025

Purpose

This fact sheet gives basic guidance to Oklahoma municipalities/MS4s and any members of the public who are interested in ways that Low Impact Development/Green Infrastructure can be used to combat urban stormwater pollution. This fact sheet specifically covers costs and benefits to consider when implementing a LID project. The information presented is *not* intended to provide complete guidance on LID design, costs, permit compliance, or construction and is intended as a general information source and resource guide.

LID Costs & Benefits

A common misconception when communities are deciding whether or not to install LID/GI projects is that the costs always outweigh the benefits. While the costs of construction for some LID practices can be high, many effective LID practices are low-cost solutions to reducing runoff.

When weighing the economic benefits of LID projects, you should calculate the construction cost of a conventional design (no LID elements), the cost of the chosen LID design, and compare the costs. Usually, the cost will be lower with the LID design due to the low-cost nature of bioswales and bioretention areas. Even if the cost is higher, there are other benefits to consider such as:

- **Natural space preservation** raises property values and provides a co-benefit of better air quality because trees are kept in place,
- **On-site runoff retention** systems decrease the need for gutters, curbs, and storm drains, saving costly installations. Runoff retention and onsite reuse for landscape irrigation can also help reduce water bills.
- **Flood reduction/control**; many LID designs offer a co-benefit of flood control because they can capture rainwater and retain it when the soil is already saturated during large rain events.

LID Maintenance

One of the biggest obstacles to LID adoption is the uncertainty around maintenance costs and methods. Often, the costs are similar to maintenance costs of conventional stormwater control systems. Despite this, maintenance of LID looks a bit different and may require staff to adapt their skills to learn weeding, trash removal, and plant care. On private property with LID systems, maintenance typically falls on the property owner or tenant.



A picture of Guthrie Green's bioswale features in Tulsa, OK.

LID Implementation Resources

Some LID practices require extensive planning and engineering while others may be implemented with minimal planning and resources. The US Environmental Protection Agency maintains an extensive [webpage](#) that provides resources for funding, planning, and implementation of LID/GI.

A few low-cost LID practices that are easy and cost-effective for individual citizens to implement is rain gardens in any low spots in a yard, and rain barrels to capture stormwater. Many municipalities, such as Owasso, even offer rain barrels for sale at discounted prices one to two times a year.

For municipalities, LID can be easily integrated into stormwater quality programs. Most stormwater permits require best management practices be implemented, and LID/GI can help cities meet those.

Further Reading:

1. (EPA 841-R-13-004)
2. (EPA 841-F-07-006)
3. <https://doi.org/10.2166/wqjrc.2014.032>
4. <https://doi.org/10.1016/j.ecolecon.2019.106480>
6. <https://doi.org/10.1017/bca.2020.3>
7. <https://doi.org/10.2166/wcc.2024.123>
8. Water Environment Federation - Case studies on the economic, social, and environmental return on investment of green infrastructure.