Costs of Low Impact Development

LID Saves Money and Protects Your Community's Resources

LID Barrier Busters Fact Sheet Series

Are Low Impact Development (LID) Practices More Economical Than Conventional Practices?

In many cases, the answer is yes. LID typically includes a variety of low-cost elements such as bioswales that retain rain water and encourage it to soak into the ground rather than allowing it to run off into storm drains where it would otherwise contribute to flooding and pollution problems. LID projects typically include smaller overall development footprints, reduce the amount of runoff generated and increase the amount of natural areas on a site, thereby reducing costs when compared to traditional stormwater management and flood control.

FAQ

Isn't LID too costly?

Barrier Busted!

Communities recognize that using LID can save money.

EPA's LID Barrier Busters fact sheet series…helping to overcome misperceptions that can block adoption of LID in your community

Example Economic Benefits of LID Elements

- Adding roadside bioswales, making roads narrower and designing smaller or porous parking lots with on-site runoff retention **saves money by reducing the amount of pavement, curbs and gutters needed**.
- Installing green roofs, disconnecting roof downspouts from impervious surfaces (driveways or streets), and incorporating bioretention areas to capture on-site runoff **saves money by eliminating the need for costly runoff detention basins and pipe delivery systems**.
- Designing more compact residential lots **saves money by reducing site grading and building preparation costs, and can increase the number of lots available for sale**.
- Preserving natural features in the neighborhood **can increase the value and sale price of residential lots**.
- Using existing trees and vegetation **saves money by reducing landscaping costs and decreasing stormwater volume**.

This 4-acre grassed overflow parking lot at a mall in West Hartford, CT cost $500,000—half the cost of a traditional parking lot.

Cost-Savings Nationwide: LID Case Studies

A U.S. Environmental Protection Agency study of 17 LID case studies around the country found that, in the majority of cases, total capital cost savings ranged from 15 to 80 percent when LID methods were used. (For details, see **www.epa.gov/nps/lid/costs07**.)

- **Sherwood, Arkansas:** Gap Creek subdivision included 23.5 acres of open, buffered natural drainage areas and traffic-calming circles that allowed the developer to reduce street widths. Results? The lots sold for $3,000 more and cost $4,800 less to develop than comparable conventional lots. The LID design required less land for stormwater control features, which allowed the developer to create and sell 17 additional lots.

Street drainage flows into this roadside bioswale in Lenexa, Kansas. The city found that on-site detention with LID practices cost 25 percent less than traditional stormwater management retrofits.

- **Seattle, Washington:** Seattle's 2nd Avenue Street Edge Alternative project redesigned an entire block with LID techniques such as bioswales in the rights-of-way. Results? Reducing street widths and sidewalks lowered paving costs by 49 percent. Overall, incorporating LID techniques cost $651,548—a savings of $217,255 compared to a conventional retrofit of the block, which would have cost an estimated $868,803.
- **Naperville, Illinois**: Developers at the 55-acre Tellabs corporate campus preserved much of the site's natural drainage features and topography, reducing grading and earthwork costs. They used bioswales and other infiltration techniques in parking lots to manage stormwater. They maximized the amount of natural areas, eliminating the need for irrigation systems and lowering maintenance costs when compared to turf grass. Results? As seen in the table below, total LID project costs were $461,510 less than a conventional design would have been.

Sample Costs: Comparing Conventional Stormwater Controls with LID Techniques in a Corporate Development (Tellabs) in Naperville, Illinois

Construction Item	Cost of Conventional Development	Cost When Using LID Practices	Dollars Saved with LID
Site preparation	$2,178,500	$1,966,000	$212,500
Stormwater management	$480,910	$418,000	$62,910
Landscape development	$502,750	$316,650	$186,100
Total	**$3,162,160**	**$2,700,650**	**$461,510**

LID Provides Added Value for Communities

Besides reducing the capital and other actual costs, using LID practices provides numerous additional economic benefits, some of which are difficult to quantify, including:

- Improved aesthetics for communities
- Expanded recreational opportunities
- Increased property values due to the desirability of the lots and their proximity to open space
- Increased marketing potential and faster sales for residential and commercial properties
- Reduced stream channel damage and pollutant loadings in downstream waters
- Reduced drinking water treatment costs
- Reduced costs associated with combined sewer overflows, where applicable

LID offers great flexibility for developing and re-developing properties. A wide range of LID technology choices are available to match the needs of individual sites and the desires of the parties developing or buying the property.

A roadside swale captures and retains runoff in Seattle, Washington. The city saves money with LID by avoiding costly stormwater infrastructure and reducing paving costs.

This bioretention pond in Wilsonville, Oregon collects runoff from the rooftops, sidewalks and yards. The pond offers valuable aesthetic and wildlife habitat benefits while also reducing stormwater control costs.

Philadelphia has been expanding its use of LID by implementing new policies and demonstration projects, such as this roadside bioswale that treats runoff from an adjacent parking lot. The city's use of LID has reduced stormwater runoff volume, saving approximately $170 million in combined sewer overflow costs since 2006.

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