



## Reducing Stormwater Costs through Low Impact Development (LID)

### Full Mitigation Best Practice Story

#### *Regional, FEMA Region V*

**Kane County, IL** - The Mill Creek subdivision in the town of Geneva, Kane County, Illinois is a 1,500-acre, mixed-use community built as a conservation-design development.

The subdivision was built using cluster development. It uses open swales for stormwater conveyance and treatment, and it has a lower percentage of impervious surface than conventional developments.

When compared with the conventional development, the conservation-site design techniques used at Mill Creek saved approximately \$3,411 per lot. Nearly 70 percent of these savings resulted from reduced costs for stormwater management, and 28 percent of the savings were found in reduced costs for site preparation.

Mill Creek is one of 17 case studies of low-impact development costs and benefits featured in a new report released Tuesday by the Nonpoint Source Control Branch of the U.S. Environmental Protection Agency.

Using U.S. and Canadian examples, the report, "Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices," shows that in the vast majority of cases, implementing well-chosen LID practices saves money for developers, property owners, and communities while protecting and restoring water quality.

LID practices are intended to manage urban stormwater runoff at its source. The goal is to mimic the way water moved through an area before it was developed by using design techniques that infiltrate, evapotranspire, and reuse runoff close to its source.

Some common LID practices include rain gardens, grassed swales, cisterns, rain barrels, permeable pavements, and green roofs. LID practices increasingly are used by communities across the country to help protect and restore water quality.

The report highlights examples that, in most cases, reduce project costs while improving environmental performance. Total capital savings ranged from 15 to 80 percent, with a few exceptions in which LID project costs were higher than conventional stormwater-management costs. As LID practices become more common, the EPA anticipates that they will become less expensive to use.

While the study focuses on the cost reductions and cost savings that are achievable through the use of LID practices, the EPA says communities can experience many amenities and associated economic benefits that go beyond cost savings.

"These include enhanced property values, improved habitat, aesthetic amenities, and improved quality of life," the report says.

This study does not monetize and consider these values in performing the cost calculations, but the EPA says these economic benefits are "real and significant."

For that reason, EPA has included a discussion of these economic benefits in the study document and has provided references for further exploration.

**Note: This story is part of a case study that involved multiple regions.**



### Activity/Project Location

Geographical Area: **Regional (Multiple States)**

FEMA Region: **Region V**

### Key Activity/Project Information

Sector: **Public**

Hazard Type: **Flooding**

Activity/Project Type: **Flood Control**

Activity/Project Start Date: **01/2000**

Activity/Project End Date: **12/2007**

Funding Source: **Other Federal Agencies (OFA)**

### Activity/Project Economic Analysis

Cost: **Amount Not Available**

### Activity/Project Disaster Information

Mitigation Resulted From Federal  
Disaster? **No**

Value Tested By Disaster? **Unknown**

Repetitive Loss Property? **Unknown**

### Reference URLs

Reference URL 1: <http://www.epa.gov/owow/nps/lid/costs07/>

Reference URL 2: <http://www.fema.gov/hazard/flood/index.shtm>

## Main Points

- The Mill Creek subdivision is a 1,500-acre, mixed-use community built as a conservation-design development.
- The subdivision was built using cluster development.
- It uses open swales for stormwater conveyance and treatment.
- It has a lower percentage of impervious surface than conventional developments.
- When compared with the conventional development, the conservation site design techniques used at Mill Creek saved approximately \$3,411 per lot.
- Nearly 70 percent of these savings resulted from reduced costs for stormwater-management, and 28 percent of the savings were found in reduced costs for site preparation.
- Implementing well-chosen LID practices saves money for developers, property owners, and communities while protecting and restoring water quality.
- LID practices are intended to manage urban stormwater runoff at its source by mimicing the way water moves through an area before it was developed by using design techniques that infiltrate, evapotranspirate, and reuse runoff close to its source.