Fall 2006 Edition 2

LID NEWS

Low Impact Development

Balancing Development with Water Quality Protection

LID NEWS is a newsletter designed to inform elected and appointed officials in southwest Michigan about LOW IMPACT DEVELOPMENT (LID). The LID approach to land development utilizes various land use planning and design practices and technologies to simultaneously protect water quality and reduce infrastructure costs.

What is LID and What are the Benefits of Utilizing LID?

What if development and infrastructure costs could be reduced, while the environment is protected, and the marketability of a development is increased? It may sound too good to be true, but many developers throughout the nation have been able to meet these ambitious goals. How? By incorporating a growing collection of **innovative** practices and technologies into their existing land development processes and practices. Low Impact Development (LID) is an approach to land development that uses various land planning and design practices and technologies to simultaneously conserve and protect natural resource systems and reduce infrastructure costs. LID still allows land to be developed, but in a cost-effective manner that helps mitigate potential environmental impacts.

Definition of LID

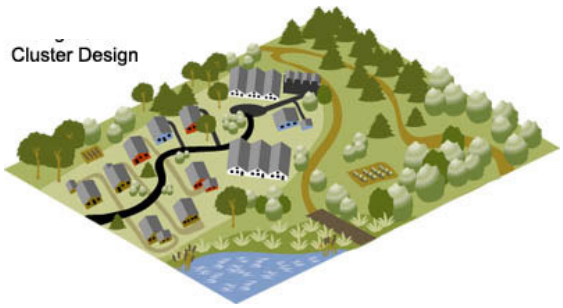
Low Impact Development (LID) is an approach to land development that uses various land planning and design practices and technologies to simultaneously conserve and protect natural resource systems and reduce infrastructure costs.

There are numerous design practices and technologies developers can use through the LID approach. It is important for municipal officials to encourage developers during the planning stages of a development to identify opportunities to protect water and other natural resources. **Examples of opportunities include saving trees on the site, not building on sensitive areas (wetlands and steep slopes), orienting roads and lots to allow for passive solar orientation of homes, and providing wildlife habitat and open spaces.** Such efforts have resulted in rapid sales, enhanced community marketability, and higher-than-average lot yields.

The LID approach seeks to do the following:

1. Preserve Open Space and Minimize Land Disturbances

Many municipal officials are recognizing the value of open space, mature landscapes, and native vegetation. Open-space tracts incorporated into community designs and planned as components of larger, contiguous areas are highly desirable; in fact, homeowners frequently seek assurances that their community enjoys easy access to undeveloped areas located nearby. Minimizing land disturbance helps ***lessen the impacts to water quality*** both on and off the site.



2. Utilize a Site Analysis to Protect Sensitive Natural Features and Processes

Protection of a site's sensitive natural features and natural processes is paramount to planning for LID. The way to achieve is for municipalities to require a thorough site analysis to help identify developable and non-developable areas of a site and to understand the pre-development hydrology of the site. By avoiding sensitive areas (wetlands, floodplains, steep slopes, forested areas, etc) and directing development into areas that will have the least impacts on air, water, soil, and vegetation, the best balance between development and the ***protection of water and natural resources*** can be achieved.

3. Identify and Link On- and Off-Site "Green Infrastructure"

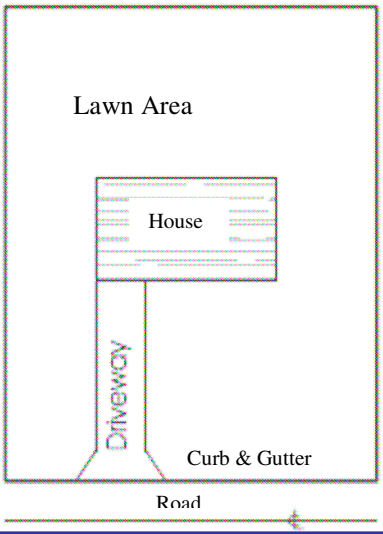
Green infrastructure represents the planned and managed network of wilderness, parks, greenways, conservation easements, and working lands with conservation value that support native species, maintain natural ecological processes, and ***sustain air and water resources***. Municipal officials should strive to identify on-site opportunities to support and connect to green infrastructure in their communities.

4. Incorporate Natural Features (Wetlands, Riparian Corridors, Mature Forests) into Site Designs

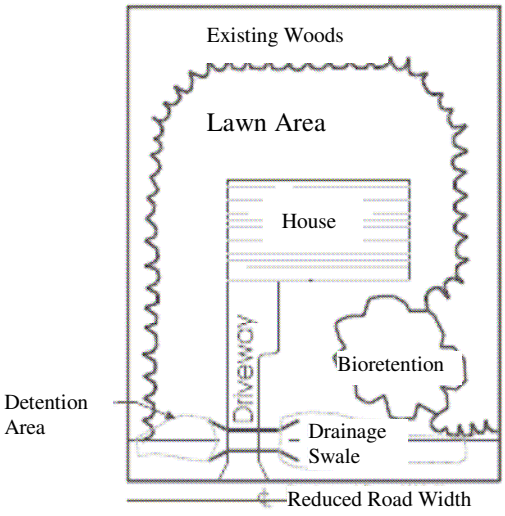
LID takes advantage of natural resources for both their functional and aesthetic qualities. For instance, when designed correctly, pond systems can provide storm water management solutions as well as aesthetic and recreational benefits for the entire community, thus increasing lot and community marketability.

5. Decentralize and Micromanage Storm Water at Its Source

Understanding the difference between pre- and post-development hydrologic patterns is critical to LID. The use of best management practices to reduce the amount of impervious surfaces, disconnect flow paths (i.e., downspouts connected to storm sewers), and treat storm water at its source all help ***minimize the impacts to water quality and local hydrology***.



With **Conventional Development** water is moved off site as quickly as possible with curb, gutter, and storm sewers.



With **Low Impact Development** water is slowed down and allowed as many opportunities as possible to soak into the ground.

Benefits of LID

Overall, using LID can lead to the protection of water quality and wildlife habitat, increased open spaces, protection of trees, reduced land disturbance, decreased infrastructure costs, and reduced homeowner energy bills. To developers, LID can offer both infrastructure savings and a way to respond to increasingly stringent environmental regulations. For municipalities, LID can help contain burgeoning street and storm water management costs. For community residents and visitors, LID can encourage local environmental stewardship and attract those that want to live in a more sustainable community. And, for the environment, the benefits speak for themselves.

Summary of LID Benefits

Developers
Minimizes land clearing and grading costs
Reduces infrastructure costs (streets, curbs, gutters, sidewalk)
Reduces storm water management costs (reduces or eliminates storm sewers and ponds)
Increases lot sale yields and reduces permit fees
Increases lot and community marketability
Municipalities
Protects site and regional water quality by reducing sediment, nutrient, and toxic loads to waterbodies
Balances growth needs with natural resource protection
Reduces municipal infrastructure and utility maintenance costs (streets, curbs, gutters, sidewalks, storm sewers and ponds)
Fosters public/private partnerships
Home Buyer
Provides local accessibility to open spaces, recreation and wildlife areas
Preserves and protects amenities that can translate into more saleable homes and communities
Provides shading for homes and properly orients homes to help decrease monthly utility bills
Environment
Preserves integrity of ecological and biological systems
Protects site and regional water quality by reducing sediment, nutrient, and toxic loads to water bodies
Reduces impacts to local terrestrial and aquatic plants and animals
Preserves trees and natural vegetation
Creates connected corridors of wildlife habitat

Southwest Michigan Planning Commission
185 E. Main Street, Ste 701
Benton Harbor, MI 49022
(269) 925-1137
www.swmpc.org

Low Impact Development Vs. Conventional Development Cost Comparison

Development Item	LID Costs	Conventional Costs
Grading	$358,500	$441,600
Paving	$255,760	$335,665
Concrete (sidewalks, curbs)	$259,995	$271,800
Storm Sewer	$204,100	$444,300
Sanitary Sewer	$385,280	$415,600
Main Water Line	$384,240	$405,950
Landscaping	$120,000	$65,000
TOTAL COSTS	**$1,967,875**	**$2,379,915**

Cost Comparison provided by JF New & Associates and Belinski Homes- Laurel Springs

In this example, by utilizing LID Development Practices a **Total Cost Savings** of **$412,040** was realized! Start talking to developers in your community about using Low Impact Development techniques!

Future Issues of this newsletter will address:
LID techniques (rain gardens, green roofs, porous pavement options, open space/cluster developments, use of native plants, etc.) and examples of LID in southwest Michigan.*

*If you know of a LID project in southwest Michigan, please contact: **Marcy (269) 925-1137 x25 colcloughm@swmpc.org**. For more information or questions, please visit these websites or contact the watershed coordinators:

Black River Watershed: Erin Fuller (269) 657-4030 x5 www.vbco.org/blackriver_2.asp
Galien River Watershed: Jean Brokish (269) 469-2330 www.swmpc.org/galien_river.asp
Gun River Watershed: Shawn McKenney (269) 673-8965 x3 www.allegancd.org/gun-river
Paw Paw River Watershed: Matt Meersman (269) 925-1137 x22 www.swmpc.org/pprw.asp

See more on LID at www.swmpc.org/LID.asp

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DEQ Michigan's Nonpoint Source Program