

The Problem of Consequences

Embracing low
impact development



By Steven Trinkaus

It has been well documented that the current approach to land development and storm water management has experienced many cases of “unintended consequences” in actual practice. Most of these consequences have had a negative impact on the environment, especially aquatic systems. These impacts include channel erosion and resultant downstream sedimentation due to increased storm water flows being directed to streams and rivers, and water quality impairments due to increased pollutant loads found in the runoff. Additionally, the landscape is manipulated to “fit” the development concept, which results in increased land clearing, extensive site grading, and loss of natural habitats and ecosystems.

In order to address the multitude of adverse impacts associated with our current land development practices, we must embrace a significant change: the adoption of low impact development (LID) as a development approach and storm water management philosophy.

The largest difference between conventional practices and LID is the focus on small, frequent storm events and the goal of mimicking pre-development hydrology for these small storm events. The LID approach is based on the types of soils found on the site, as different soils will demonstrate different hydrologic responses to rainfall events. Lastly, LID is a “source control” approach to storm water management, where the goal is to work with the runoff at the point where it is created and not at the “end of the pipe,” which is what we currently do.

The adoption of LID cannot be done in a vacuum and must involve all of the stakeholders in the land use field. These stakeholders include the regulatory

community, design professionals, developers/builders and maintenance people, and homeowners as the end users. Without a broad-based consensus to adopt LID approaches, it simply will not happen.

One of keys to LID adoption is showing the adverse environmental impacts associated with the current regulatory program. Many people across the development spectrum often are unaware of these adverse impacts, and photographs speak louder than words.

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Education also is very important to strengthen the motivation to adopt LID. Today, there are many misconceptions about LID that have proven invalid, yet are continually raised

as to why LID cannot be applied in an area. These misconceptions include:

- LID is an unproven technology;
- It will not work in a cold climate;
- LID storm water management systems are maintenance intensive;
- LID is more expensive than conventional practices; and
- I do not know how to design it and do not want to be responsible for the failure of the system.

LID is a performance-based approach to storm water management and water quality. Because of this, the performance goals can be varied to address particular storm water issues in a community and create development in harmony with the natural environment. **SWS**

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