

LOW IMPACT DEVELOPMENT OVERVIEW¹

Low Impact Development (LID) is an innovative stormwater management approach with a basic principle that is modeled after nature: manage rainfall at the source using uniformly distributed decentralized micro-scale controls. LID's goal is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Techniques are based on the premise that stormwater management should not be seen as stormwater disposal.

Instead of conveying and managing / treating stormwater in large, costly end-of-pipe facilities located at the bottom of drainage areas, or sending stormwater into streams, LID addresses stormwater through small, cost-effective landscape features located at the lot level. These landscape features, known as Integrated Management Practices (IMPs), are the building blocks of LID and are discussed in the Design Manual noted in the footnote. Almost all components of the subdivision and village environment have the potential to serve as an IMP. This includes not only open space, but also rooftops, streetscapes, parking lots, sidewalks, and medians. LID is a versatile approach that can be applied equally well to new development, village retrofits, and redevelopment / revitalization projects. LID works in highly urbanized constrained areas, as well as open regions and environmentally sensitive sites. Currently a demonstration project is being implemented at the Warsaw office of the Northern Neck Planning District Commission.

LID principles are intended to be applied in Northumberland County in village areas and in subdivisions where stormwater could drain into existing streams or the Bay.

Development of LID principles began with the introduction of bioretention technology in Prince George's County, Maryland, in the mid-1980s. LID was pioneered to help Prince George's County address the growing economic and environmental limitations of conventional stormwater management practices. LID allows for greater development potential with less environmental impacts through the use of smarter

¹ U.S. EPA Office of Water The national LID Design Manual (*Low Impact Development Design Strategies: An Integrated Design Approach*)

designs and advanced technologies that achieve a better balance between conservation, growth, ecosystem protection, and public health / quality of life. Today, bioretention is just one of the LID techniques available to users. Other techniques, such as permeable pavers, tree box planters, and disconnected downspouts, are all available to help users control pollutants, reduce runoff volume, manage runoff timing, and address a number of other ecological concerns.

LID has numerous benefits and advantages over conventional stormwater management approaches. In short, it is a more environmentally sound technology and a more economically sustainable approach to addressing the adverse impacts of subdivisions and village urbanization. By managing runoff close to its source through intelligent site design, LID can enhance the local environment, protect public health, and improve community livability - all while saving developers and local governments money.

The purpose of LID is to remove the challenge of how to restore stream quality in watersheds that are being densely developed before it becomes a challenge. Simply relying on impervious reduction and/or conventional detention ponds to address these issues is not feasible, practical or sustainable. LID provides the key in its emphasis on controlling or at least minimizing the changes to the local hydrologic cycle or regime.

LID systems cost less than conventional stormwater management systems to construct and maintain in a village environment, in part, because of fewer pipes, fewer below-ground infrastructure requirements, and less imperviousness. Space once dedicated to stormwater ponds in subdivisions can now be used for additional development to increase lot yields or be left as is for conservation. The greater use of on-lot multi-purpose landscaping / vegetation also offers human "quality of life" opportunities by greening neighborhoods and contributing to livability, value, sense of place, and aesthetics. Other benefits include enhanced property values and re-development potential, greater marketability, improved wildlife habitat, pollution reduction, enhanced wetlands protection, and decreased flooding.