Benefits of LID

LID provides a number of benefits and advantages over traditional development and stormwater management approaches. Some of these benefits and advantages include:

Reduced consumption of land for stormwater management. LID practices rely upon the natural capacity of undisturbed land to absorb precipitation thus reducing the need for structural stormwater controls that often require significant land area. When structural controls are still needed, they are typically small, close to the source of runoff, and can be integrated into the areas of the site that are typically not used for stormwater management.

Reduced development costs. Traditional stormwater management can require substantial land clearing, earthwork, structural drainage systems, and structural stormwater controls. LID approaches involve more compact design with less land clearing and earthwork, less impervious area, and the use of natural flow paths and vegetated conveyances instead of catch basins and pipes. This results in reduced reliance on drainage infrastructure, smaller stormwater controls, and reduced need for excavation and construction materials, which translates into cost savings to developers.

Increased property values. In addition to reduced development costs, sites that employ LID can have increased property values by improving the quality of building lots and increasing their marketability (e.g., greater sense of community cohesion and character, more attractive landscape, and more open space for conservation and recreation).

More aesthetically pleasing development. Traditional stormwater management tends to incorporate the use of large, unnatural looking practices such as detention ponds that take up valuable space on a site. When neglected, these practices may present safety and mosquito concerns. LID can result in a more aesthetically pleasing and naturally attractive landscape.

Reduced maintenance. Most LID site planning and design techniques require little or no maintenance. LID structural practices generally require less maintenance and similar or lower maintenance costs that traditional drainage systems. Much of the maintenance that is required can be accomplished by the average landowner or contracted landscape maintenance companies.

Preserved site hydrology. LID management mimics natural site hydrology and relies on the ability of undisturbed land to retain and absorb runoff from impervious surface. Runoff that is absorbed recharges groundwater and stream baseflow and does not need to be managed or controlled by a structural stormwater practice.

Reduced pollutant loads and improved water quality. LID approaches reduce the loading of sediments, nutrients, and pathogens to streams and other waterbodies because. Landscapes that utilize LID practices minimize discharge and often retain all runoff from events smaller than the 2-year, 24-hour design storm. The runoff volume reduction benefits of LID result in significantly reduced pollutants loadings compared to structural stormwater BMPs that rely on pollutant removal through treatment alone.

Preservation of natural systems. LID preserves large portions of contiguous land in an undisturbed, natural state, which preserves the chemical, biological, and ecological integrity of natural systems.

Enhanced climate and community resilience. Improved land use strategies contribute to community resiliency and can help mitigate impacts from climate change. For example, LID can help avoid or reduce increases in runoff volumes and peak flows to existing urban infrastructure that is, in many cases, already undersized due to past development and vulnerable to more intense and frequent storms. Maintaining existing site vegetation, minimizing and disconnecting impervious surfaces, and using small-scale controls that rely on vegetation can also provide shading and cooling of runoff from impervious surfaces, mitigating increased temperatures.