

Storm Water Design and Specification Manual
***Draft* Green Infrastructure Supplemental Storm Water Document**

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Executive Summary

The goal of this document is to introduce Low Impact Development (LID) techniques and the benefits (incentives), as well as to provide sufficient information (description and applicability, advantages, disadvantages, technical guidance, and cost) on each practice to demonstrate the strategies necessary to integrate innovative and highly effective LID storm water management techniques into design.

LID is an approach to land development that uses various land planning, design practices and technologies to simultaneously conserve and protect natural resource systems. It is an innovative multi-step storm water management approach that 1) utilizes thoughtful site planning and 2) manages rainfall at its source through the use of integrated and distributed micro-scale storm water practices (green infrastructure).

Some of the onsite storm water runoff reduction practices (green infrastructure) included in this document are downspout disconnection, rain barrels, cisterns, rain gardens, green roofs, roof-top storage, swales, and permeable pavement systems, among others. Several of the incentives for incorporating these techniques into design include: ancillary benefits, reduction in storm water sizing criteria (water quality and quantity), and a reduction in the Storm Water Utility Fee.

LID storm water management techniques can be used to meet supplementary goals (or in many instances other existing City regulations) in addition to meeting the storm water requirements. Many LID storm water management techniques can be integrated into urban site features (rain gardens, flow through planters, swales). A number of the generally accepted benefits from LID techniques (green infrastructure) include: cleaner water, enhanced water supplies, cleaner air, reduced urban temperatures, increased energy efficiency, infrastructure cost savings, and community benefits (quality of life).

In general, the storm water sizing criteria provide a strong incentive to reduce impervious cover (through LID techniques) at development and redevelopment sites (e.g., water quality and quantity). Developers could reduce the imperviousness by 20% and potentially reduce the volume of water they have to manage for quality by 30%. Reducing the curve number from 85 to 75 on a development can reduce runoff by nearly 25%. This could potentially reduce the overall cost of development.

The relationship between percent (%) impervious area and Storm Water Utility Fee is directly proportional. For a 20-acre parcel, if the site is 80% impervious the 20-year net present value of the current utility fee is approximately \$167,000. In comparison, a reduction in imperviousness to 60% would result in a 20-year net present value of \$125,000.

There are many incentives for incorporating LID storm water management techniques into storm water design. Developers and Municipalities, alike are realizing these benefits and have started integrating these techniques into both public and private development and redevelopment projects across the country.

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