



Low Impact Development




Site Planning, Design and Best Management Practices
for Stormwater Management



Low Impact Development for Stormwater Retention

Low impact development (LID) is a development approach that involves thoughtful planning and site design, along with the incorporation of stormwater control measures or best management practices (BMPs), to minimize impermeable surfaces and control runoff from the developed property. LID minimizes impacts to downstream properties and waterbodies.

LID is accomplished by:

-  Preserving and developing natural landscape features and vegetation
-  Minimizing imperviousness and directing runoff to permeable areas
-  Creating functional and appealing site drainage using stormwater as a resource



The following types of projects are considered Priority Development Projects and are subject to LID Performance Requirements:

1. Single Family Residential Projects on parcels 10,000 SF or more
2. All other development projects on parcels 5,000 SF or more
3. Projects that create/replace 2,500SF or more of impervious surface area and discharge stormwater directly to a Significant Ecological Area (SEA) as designated by the City.

Priority Development Projects must **retain the Storm Water Quality Design Volume (SWQDv)** defined as:

- $\frac{3}{4}$ inch storm or the 85th percentile 24-hour storm, whichever is greater onsite using **onsite infiltration, bioretention and/or rainfall harvest and use** BMPs.

Street & Road construction 10,000 square feet or more must:

Follow [USEPA Guidance](#) and City's **Green Street Policy**.

Commercial and Industrial projects must:

Incorporate BMPs from [LA County LID Standards Manual, Appendix D](#) for commercial projects

Projects unable to retain 100% of the SWQDv on-site due to technical infeasibility may implement alternative compliance measures in accordance with the municipal NPDES permit.

Must consider green roofs and/or rainfall harvest & use before a finding of technical infeasibility can be made.

Submittal Requirements for Priority Projects:

1. Post-Construction Stormwater Mitigation Plan, including BMP sizing calculations and pollutant removal efficiencies
2. Operation and Maintenance Plan
3. Maintenance Agreement

Site Design BMPs for all Development Projects

Conserve Natural Areas

By limiting the clearing and grading of native vegetation on a project site and prioritizing native and/or drought-tolerant plants, you can create a beautiful landscape that functions as a rainwater sponge!

Protect Slopes and Channels

Simply designing a site to maintain existing or pre-development drainage patterns and conveying stormwater runoff away from the tops of slopes, you can minimize impact to downstream waterways and properties!

Direct Runoff to Vegetated Areas

Runoff from impervious surfaces like roofs and driveways can be directed to rain gardens or swales where it can soak into the ground rather than draining into the street or storm drain system.

Minimize Impervious Surfaces

There are many attractive pavement choices that let rainwater soak right through, minimizing runoff impacts downstream!

Minimize Soil Compaction

By limiting heavy equipment on the site during construction and considering the addition of soil amendments to restore soil permeability, you can minimize soil compaction and make your garden into a sponge for rainwater!

Refer to the [South Bay Homeowner's Guide to Rainwater Harvesting](#) for more details on these BMPs, specifically how to size and design rain gardens and vegetated areas to maximize percolation of rainwater, how to incorporate permeable paving into your project.



Priority Project BMPs

Infiltration

Infiltration BMPs are constructed with a highly permeable base specifically designed to infiltrate rainwater, along with a storage component. Examples of infiltration BMPs include porous pavement with storage, subsurface infiltration trenches, infiltration basins, and dry wells.

Bioretention

Bioretention BMPs are vegetated, shallow depressions that provide storage, infiltration, and evapotranspiration of stormwater. Pollutants are removed by filtering stormwater through plants and engineered soils. Bioretention BMPs designed to retain water on-site must not include an underdrain. Examples of bioretention BMPs include vegetated planter boxes and rain gardens.

Rainfall Harvest and Use

Rainfall Harvest and Use BMPs capture stormwater from impervious surfaces such as rooftops and hold it for later use in lawn and garden watering. Rainwater can be collected for use in a variety of vessels from smaller rain barrels to large, custom-built cisterns.

Biofiltration

Biofiltration BMPs may be used on a project that has demonstrated technical infeasibility of retaining the SWQDv. These BMPs are incorporated into landscaped areas that include engineered soils to treat runoff and can be constructed with or without an underdrain. Biofiltration BMPs must address 1.5x the non-retained SWQDv.

Refer to the [LA County LID Manual](#) and the [South Bay Homeowner's Guide to Rainwater Harvesting](#) for more information on these BMPs.

