

Low Impact Development (LID) Plan Guidance

WHAT IS LID?

LID stands for: Low Impact Development, it is a stormwater management strategy that emphasizes conservation and the use of existing natural site features integrated with distributed, small-scale stormwater controls to more closely mimic natural hydrologic patterns in residential, commercial, and industrial settings.

WHY IS LID BEING REQUIRED?

The urbanization of Southern California has disrupted the natural flow of stormwater runoff. Rain falling on roofs now flows into metal or plastic downspouts, then to concrete curbs and gutters along asphalt roads, then to concrete storm drains, then to concrete river channels, and then finally into estuaries and the Pacific Ocean. You can see the problem; rainwater no longer comes into contact with dirt and vegetation. Any pollutants (heavy metals, bacteria, nutrients, pesticides) that would have previously been naturally degraded, are now flowing straight out to environmentally sensitive areas. LID is a design strategy that corrects this problem.

WHAT ARE THE REQUIREMENTS?

In December 2012, the Regional Board adopted a new Municipal Separate Storm Sewer System (MS4) Permit (Order No. R4-2012-0175). The Permit establishes new LID requirements for new development and redevelopment projects. Development projects which require the design and implementation of post-construction controls to mitigate storm water pollution, prior to completion of the project(s), through the development of an LID Plan are as follows:

- a. All Development Projects equal to 1 acre or greater of disturbed area that adds more than 10,000 square feet of Impervious Surface area.
- b. Industrial Parks with 10,000 square feet or more of surface area.
- c. Commercial Malls with 10,000 square feet or more of surface area.
- d. Retail Gasoline Outlets with 5,000 square feet or more of surface area.
- e. Restaurants with 5,000 square feet or more of surface area.
- f. Parking Lots with 5,000 square feet or more of Impervious Surface area, or with 25 or more parking spaces.
- g. Streets and roads construction with 10,000 square feet or more of Impervious Surface area. Street and road construction applies to standalone streets, roads, highways, and freeway projects, and also applies to streets within larger projects.
- h. Automotive Service Facilities with 5,000 square feet or more of surface area.
- i. Projects located in or directly adjacent to, or discharging directly to an Environmentally Sensitive Area, where the Development will:
 - (1) Discharge Stormwater Runoff that is likely to impact a sensitive biological species or habitat; and
 - (2) Create 2,500 square feet or more of Impervious Surface area
- j. Single-family Hillside Properties.
- k. Redevelopment Projects:
 - (1) Construction Activity that results in the creation, addition or replacement of 5,000 square feet or more of Impervious Surface area on an already developed Site of one of the Projects identified in this Subsection.

For more information on New Development/Redevelopment requirements, the new MS4 Permit can be found at:

http://www.waterboards.ca.gov/rwgcb4/water_issues/programs/stormwater/municipal/index.shtml

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WHAT IS A LID PLAN?

A LID Plan is a document developed to control pollutants, pollutant loads, and runoff volume being released from the project site by minimizing the impervious surface area and controlling runoff from impervious surfaces. The new MS4 Permit requires for projects to retain on-site the Stormwater Quality Design Volume (SWQDv) defined as the runoff from:

- a. The 0.75-inch, 24-hour rain event; or
- b. The 85th percentile, 24-hour rain event, as determined from the Los Angeles County 85th percentile precipitation isohyetal map, whichever is greater.

In general, the LID Plan should contain at least the following:

1. A complete report including all applicable information, a Site Plan showing the site with all proposed post-construction BMPs and water quality notes, Grading Plans showing the site with all proposed BMPs and water quality notes, calculations for each BMP, and an Operations and Maintenance (O&M) Plan.
2. A soils investigation must be conducted at the site to prove Infiltration is feasible. The report (Geotech Report, Soils Report, etc.) must be provided, detailing the results of the soil investigation, the infiltration rate, groundwater depths, soil characterization, etc. Note that soil borings must be conducted in the area of the proposed BMPs. In addition to the complete soils report, a letter signed and stamped with wet ink application by a geotechnical engineer must be provided. The letter must state that the soil will not exhibit instability as a result of implementing the proposed BMPs, that the seasonal high groundwater depth is at least 10 feet below the base of the infiltration BMP, and the infiltration rate is at least 0.3 in/hr. In the case that infiltration is proven infeasible, biotreatment would be the next option.
3. Calculations for each BMP must follow an approved published design standard (i.e. City Manuals, County Manuals, Caltrans, CASQA, etc.). Each design standard used must be referenced in the LID Plan and the calculations must be followed step by step with no alterations. Note that the cross sections of the BMPs must follow the design criteria from the design standard used. Also note that biotreatment BMPs must be sized to treat 1.5 times the portion of the SWQDv that is not reliably retained on-site and must meet all design criteria in Attachment H of the MS4 Permit (Order No. R4-2012-0175). In cases where the published design standard and Attachment H of the MS4 Permit contradict, the MS4 Permit shall govern.
4. Full sized copies (24x36 or larger) of all relevant plans (i.e. grading plans, plumbing plans, drainage plans, etc.) signed, stamped, and dated with wet ink application must be included with all water quality notes and details. Only the sheets relevant to the SUSMP must be provided. This is to properly evaluate the site design and ensure all BMPs are located on plans which will be used by the contractor during construction. The plans must indicate the locations of all BMPs, cross sectional details of all BMPs, conveyance systems, drainage connections, overflow processes, elevations, inverts, etc. All conveyance systems (i.e. ribbon gutters, area drains, storm drains, swales, etc.) must be indicated with inverts and elevations. The cross sectional details of the BMPs must show the type and depth of all layers (i.e. amended soil layer, gravel layer, etc.) and must follow the criteria from the design standard used. Note, the entire site (100%) must be treated with LID BMPs prior to discharge.
5. An Operations and Maintenance (O&M) Plan must be included (example provided) as a separate attachment. This should include the components of the BMPs, the frequency of inspections and maintenance, the responsible entity, etc. Note that the name, address, email, etc. of the specific entity (individual, not company) needs to be identified. A long term BMP maintenance plan (including funding) needs to be established and should be explicit and consistent throughout the report.
6. A Master Covenant Agreement (MCA) form must be signed and dated with wet ink application and have an attached Operations and Maintenance (O&M) Plan, Site Plan, and Owner's Certification. The MCA must list the type and dimensions of each BMP. Once the MCA is approved, it will need to be notarized and recorded (along with attachments) with the County Recorder's Office.

A LID Plan submittal must include: Three (3) hard copies of the LID Plan, three (3) hard copies of the full sized grading plans, three (3) hard copies of the MCA, one (1) copy of all original (wet ink documentation) forms and certifications, and one (1) electronic copy (CD, download from FTP site, etc.) of all documents listed above.