



## STORMWATER MITIGATION LOW IMPACT DEVELOPMENT (LID) Plan Review Checklist Sheet

Permit Application #:

Development Type:

Job Address:

Applicant Full Name:

Phone:

Applicant Email:

City Plan Checker:

Phone:

Email:

### INSTRUCTIONS FOR PROCEEDING WITH THE PLAN CHECK (PC) PROCESS:

1. Review corrections circled on this Plan Check Correction Sheet.
2. **Provide a written response or reference to plans and details pursuant to the corrections. Location of any revisions on the plans shall be identified as part of your responses. For any questions related to the PC corrections, email or call the Plan Check Engineer.**
3. Complete item #2 above and submit the originally checked set of plans, report, and calculations to the counter along with these plan correction sheets. **Unprepared responses with incomplete plans or calculations may result in plan check delays.**
4. Once all the items have been corrected a Covenant and Agreement will be prepared for final approval. Upon providing a certified copy and 3 sets of plans, a clearance will be issued.

**Applicants must check "OK" or "N/A" for each item. City Staff to complete "OK" or "Incomplete"**

Item	Applicant		City Staff	
	OK	N/A	OK	Incomplete
<b>PART I: LID REPORT</b>				
1. <b>Cover Sheet</b> 1. Provide the Civil Engineer Stamp on final report 2. Name of Project and Developer				
2. <b>Project Background</b> 1. Introduction and Project Description a. Project address b. Lot size c. Indicate if the project is comprised of multiple lots d. Watershed area e. Existing use f. Existing drainage pattern g. Proposed development type h. Proposed site drainage i. Breakdown of the entire site pervious and impervious area. ii. Breakdown by tributary area of pervious and impervious area i. Building type j. Number of stories				
3. <b>Hydrology Calculations</b> 1. Provide the project Stormwater Quality Design Volume (SWQDV), and Flow Rate (Q) based on the greater of the following: a. 0.75-inch rain event; b. 85 <sup>th</sup> percentile, 24-hour runoff event, as determined from the <a href="#">Los Angeles County 85<sup>th</sup> percentile precipitation isohyetal map</a> (      inch).				

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<p>2. The LA County HydroCalc Calculator may be used to determine (SWQDV &amp; Q).</p> <p>3. Provide SWQDV calculation for each proposed tributary area.</p> <p>4. Provide sizing calculations for each proposed BMP, see <a href="#">LID Sample Design Calculations</a> for BMP sizing examples. If the BMP is a proprietary system, calculations from the manufacturers may be provided instead.</p>				
<p>4. <b>Technical feasibility screening:</b> Discussion on feasibility screening justifications Note that On-site infiltration, bioretention, and/ or rainfall harvest and reuse techniques are equal implementation strategies under this feasibility screening section. The on-site biofiltration technique may be proposed for any remaining SWQDV that was not mitigated by the prior techniques</p> <p><b>1A. On-site infiltration, bioretention technique,</b></p> <ol style="list-style-type: none"> <li>1. Discuss infiltration feasibility.</li> <li>2. Provide Soil Engineer's report/recommendation.</li> <li>3. Provide percolation test and infiltration rate. Refer to LID Manual for approved test methods.</li> <li>4. Obtain and provide approval letter from the Department of Building and Safety, Grading Division, specifically for the proposed infiltration system. (refer to <a href="#">LADBS Informational Bulletin P/BC 2014-118</a>).</li> <li>5. Project is located within the Upper Los Angeles River Watershed area. Obtain and provide approval from the Upper Los Angeles River Area Watermaster. Refer to <a href="#">County of LA Department of Public Health Policy and Operations Manual</a> and <a href="http://ularawatermaster.com/">http://ularawatermaster.com/</a></li> </ol> <p><b>1B. And/ or rainfall harvest and reuse technique</b></p> <ol style="list-style-type: none"> <li>1. Provide calculations showing water irrigation demand, Estimated Total Water Usage during the wet weather season (Oct 1<sup>st</sup> to May 31<sup>st</sup>). At a minimum, only include landscaping within project limits. If preferred, all available landscaping can be used (refer to <a href="#">LID Sample Design Calculations</a>).</li> <li>2. Discuss capture and use feasibility, <math>ETWU_{8\text{-month}} \geq V_m</math>.</li> <li>3. Obtain and provide approval letter from Los Angeles County Health Department. <a href="http://www.publichealth.lacounty.gov/eh/EP/cross_con/cross_con_recycle.htm">http://www.publichealth.lacounty.gov/eh/EP/cross_con/cross_con_recycle.htm</a></li> </ol> <p><b>1C. And/or Green Roof, and or Permeable Pavement for incidental rainfall.</b></p> <ol style="list-style-type: none"> <li>1. Discuss Green Roof feasibility, if proposed, provide the total area, thickness, and manufacturer.</li> <li>2. Discuss the permeable pavement feasibility, if proposed, provide the total area.</li> </ol> <p><b>2. On-site Biofiltration technique</b></p> <ol style="list-style-type: none"> <li>1. Discuss the total stormwater volume mitigated by the techniques above, and the remaining volume that will be mitigated by the on-site biofiltration. Discuss location and design parameters (ponding depth, time to fill, etc.) used for each biofiltration device.</li> <li>2. If certain areas will not be treated, quantify and explain how it will be compensated in a different tributary area within the site, or off-site.</li> </ol> <p><b>3. Off-site groundwater replenishment (regional infiltration or bioretention), and/ or off-site retrofit (infiltration, bioretention, capture &amp; use, biofiltration)</b></p> <ol style="list-style-type: none"> <li>1. Discuss the total stormwater volume mitigated on-site, and the remaining unmitigated volume</li> <li>2. For off-site mitigation within a private development, provide site address, owner name, lot size, current use, year it was built, indicate if the site has an existing BMP. Discuss the proposed BMP, the area draining to it, the</li> </ol>				



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<p>associated stormwater volume, and provide sizing calculations for the proposed BMP.</p> <ol style="list-style-type: none"> <li>3. For off-site mitigation measures within the public right of way, provide the address, the tributary area within the public right of way to the proposed BMP, and provide sizing calculations for the proposed BMP(s). Also, provide a copy of the B-permit application.</li> <li>4. For infiltration or bioretention BMP, provide Soil Engineer's report/recommendation, and include percolation test and infiltration rate. Refer to LID Manual for approved test methods.</li> <li>5. For infiltration or bioretention BMP within an existing private development, obtain and provide Soils Report Approval letter from the Department of Building and Safety, Grading Division (refer to <a href="#">LADBS Informational Bulletin P/BC 2014-118</a>).</li> <li>6. Project is located within the Upper Los Angeles River Watershed area. Obtain and provide approval from the Upper Los Angeles River Area Watermaster. Refer to <a href="#">County of LA Department of Public Health Policy and Operations Manual</a> and <a href="#">ULARA Memo, http://ularawatermaster.com/</a></li> <li>7. Special C&amp;A process for onsite and offsite BMP</li> </ol> <p><b>4. On-site treatment measure</b></p> <ol style="list-style-type: none"> <li>1. Discuss the type of flow treatment BMP for any remaining stormwater volume that was not mitigated at the off-site, and include sizing calculation.</li> </ol>				
<p><b>5. Conclusion</b></p> <ol style="list-style-type: none"> <li>1. Provide summary table which includes:           <ol style="list-style-type: none"> <li>a. Each tributary area (total must match the entire project area).</li> <li>b. Calculate volume of each area.</li> <li>c. Proposed BMP.</li> <li>d. Required size of proposed BMP.</li> <li>e. Provided size of BMP.</li> </ol> </li> <li>2. If certain areas will not be treated, quantify and explain how it will be compensated in a different on-site, or off-site tributary area(s).</li> <li>3. Overall percent of design storm volume being mitigated on-site.</li> </ol>				
<p><b>6. Additional Corrections/Notes</b></p>				
<b>PART II: LID PLANS</b>				
<p><b>1. LOW IMPACT DEVELOPMENT (LID) PLAN</b>          Stormwater mitigation implementation strategy/plan based on feasibility screening justifications. Plans must be submitted on min 24" x 36".</p> <ol style="list-style-type: none"> <li>1. Provide cover sheet with sheet index table for the full set of plans</li> </ol>				
<p><b>2. Provide Architectural Plans</b></p> <ol style="list-style-type: none"> <li>1. Site Plan showing the following:           <ol style="list-style-type: none"> <li>a. Identify all impervious &amp; pervious surface areas.</li> <li>b. Location of BMPs.</li> <li>c. Size and dimensions.</li> <li>d. Reference to detail(s).</li> <li>e. Identify and Label outdoor trash enclosure areas.</li> </ol> </li> </ol>				

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<ul style="list-style-type: none"> <li>i. Provide detail on plans.</li> <li>ii. Must be walled to prevent off-site transport of trash.</li> <li>iii. All trash bins shall be covered. Provide the following note on plans: "All trash bins shall be covered."</li> <li>iv. If an area drain is provided, show connection to the sewer line via a clarifier, and obtain an Industrial Permit from IWMD. Otherwise, the trash enclosure pad shall be flat (0 slope), and a 2" high, 6" wide berm shall be shown along the gate; this is to prevent runoff from the enclosure area or into it. If a roof is proposed, the berm will not be required.</li> </ul>				
<p>3. Provide <b>Architectural Elevation Plan(s)</b> showing the following:</p> <ul style="list-style-type: none"> <li>1. BMP(s) location (call out, dimension, and reference detail(s)).</li> <li>2. Downspout(s) discharging into BMPs.</li> <li>3. Provide the following note on plans and fill in the parenthesis. "All downspouts to drain to (proposed BMP). See (reference sheets)."</li> </ul>				
<p>4. Provide <b>Architectural Roof Plan(s)</b></p> <ul style="list-style-type: none"> <li>1. Provide the following note on plans and fill in the parenthesis. "All roof runoff to drain to (proposed BMP). See (reference sheets)."</li> <li>2. If a green roof is proposed, include the applicable detail, and call out the same area with the detail on the roof structural plan, as well.</li> </ul>				
<p>5. Provide <b>Civil / Grading Plans</b></p> <ul style="list-style-type: none"> <li>1. Provide fine grading plan which includes all inlets, slopes, invert elevations showing how runoff is diverted into BMPs and how overflow systems are directed to the street.</li> <li>2. Location of BMPs.</li> <li>3. Size and dimensions.</li> <li>4. Provide / Reference BMP details.</li> <li>5. Provide a pretreatment system (sedimentation basin, filter insert, etc.).</li> <li>6. Provide "No Dumping – Drains to Ocean" label at all drainage inlets (i.e. catch basins, trench drains).</li> <li>7. Provide summary BMP table from LID Report on plans.</li> <li>8. Provide the following note on plans: "All slopes to be vegetated."</li> </ul> <p><b>On-site infiltration, bioretention.</b></p> <ul style="list-style-type: none"> <li>1. Provide finish elevations for the following: <ul style="list-style-type: none"> <li>a. Top and bottom of infiltration BMP(s).</li> <li>b. Overflow.</li> </ul> </li> <li>2. Provide the Soils Report Approval Letter on plans.</li> <li>3. Provide Upper LA Water Master Approval letter on plans.</li> </ul> <p><b>Rainfall harvest and use</b></p> <ul style="list-style-type: none"> <li>1. Clearly show proposed BMP and landscape area served by BMP.</li> <li>2. Show point of connection to drip Irrigation system.</li> <li>3. Direct only the SWQDV to the rainfall harvesting system and design the overflow upstream from it; this is to comply with the LACDPH Guidelines.</li> <li>4. Provide reference to the Landscape Plan.</li> <li>5. For a rainwater harvesting system with distribution pump and/or supplemental domestic water supply, obtain and provide LA County Department of Public Health Approval letter on plans. <ul style="list-style-type: none"> <li>a. Add Following note to Civil, Landscape and Plumbing plans: <ul style="list-style-type: none"> <li>i. "Refer to Los Angeles County Department of Public Health Plan Review Report for installation of rainwater catchment and irrigation system."</li> </ul> </li> </ul> </li> </ul>				



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	<p><b>On-site Biofiltration</b></p> <ol style="list-style-type: none"> <li>1. Provide finish elevations showing top and bottom of planters to verify depth.</li> <li>2. Provide grade elevations for: Inlet and outlet pipes, Biofiltration finish grade, overflow outlets, and top of wall, if any.</li> </ol> <p><b>Off-site groundwater replenishment, and/ or off-site retrofit</b></p> <ol style="list-style-type: none"> <li>1. For BMPs within the Public Right-of-Way, provide a copy of the approved B-Permit plans</li> <li>2. For BMP within private property, provide LID related sheets for the circled items below: (Civil, Architectural, Plumbing, Landscape).</li> <li>3. Provide the Soils Report Approval Letter on the plan.</li> <li>4. Provide Upper LA Water Master Approval letter on the plan.</li> </ol> <p><b>On-site treatment measure</b></p> <ol style="list-style-type: none"> <li>1. Provide grade elevations for: Inlet and outlet pipe, system finished grade, overflow outlet to the street, and system top of wall, if applicable.</li> <li>2. Provide site specific detail of the proprietary system from the manufacturer.</li> </ol>				
6.	<p>Provide <b>Mechanical Plans (Riser Diagram)</b></p> <ol style="list-style-type: none"> <li>1. Provide riser diagram and routing to each BMP. Include all downspouts and area drains.</li> </ol>				
7.	<p>Provide <b>Landscape Plans</b></p> <ol style="list-style-type: none"> <li>1. Location of BMP (refer to civil plan).</li> <li>2. Connection to drip irrigation system.</li> <li>3. Landscaped area which will use stormwater as irrigation.</li> </ol>				
8.	Fill out the top portion of the Stormwater Observation Report Form <a href="#">SOR Form</a> and include it on the plans.				
9.	<p>Add following note to Plans:</p> <ol style="list-style-type: none"> <li>1. Any changes (type, size, location) to approved stormwater Best Management Practice(s) (BMPs) must obtain written approval from Los Angeles, Department of Public Works, Bureau of Sanitation prior to construction of BMP(s).</li> </ol>				
10.	Obtain Code Modification from Building and Safety for:				
11.	<b>Final approval set must be stamped by the Engineer(s) of records (Civil, Mechanical, and Geotechnical on the infiltration BMP sheets), and the project architect.</b>				
12.	<b>Additional Corrections/Notes</b>				
<b>PART III: SITE SPECIFIC PLANS</b>					
1.	<p>(Refer to <a href="#">LID – Source Control Measures</a>)            Plans shall incorporate design criteria for:            Outdoor Material Storage Areas (S-2)            Outdoor Trash Storage Areas (S-3)            Outdoor Loading/Unloading Dock Areas (S-4)            Outdoor Repair/Maintenance Bay Areas (S-5)            Outdoor Vehicle/Equipment/Accessory Washing Areas (S-6)            Fueling Areas (S-7)</p>				



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2.	Additional Corrections/Notes				
COMMENTS					

