

PD-30: Low Impact Development

1-3 points

Goal: Use low impact development stormwater management methods that reduce the impacts associated with development and redevelopment and that mimic natural hydrology.

Sustainability Linkage

Implementing more sustainable stormwater management practices supports the environmental principle by improving water quality, managing runoff, and using technology that mimics natural hydrology.



Affected Triple Bottom Line Principles

Background and Scoring Requirements

Background

Also see PD-08: Stormwater Quality and Flow Control Low.

For the purpose of this criterion, the key terms are defined as follows:

- **“Best Management Practices”** – BMPs are stormwater management techniques that mimic natural hydrology to treat pollutants.
- **“Low-Impact Development”** – The US EPA’s [Low Impact Development website](#)¹ defines LID as an approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. There are many practices that have been used to adhere to these principles such as bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavements. By implementing LID principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. Applied on a broad scale, LID can maintain or restore a watershed's hydrologic and ecological functions. LID has been characterized as a sustainable stormwater practice by the Water Environment Research Foundation and others.

Scoring Requirements

Requirement PD-30.1

1-3 points. Use Effective BMPs

Use effective BMPs or stormwater management techniques that mimic natural hydrology to treat pollutants. To calculate the points earned for this scoring requirement, follow Steps 1 through 3 below:

- Step 1** Table PD-30.3.A on the next page identifies BMPs considered most effective for specific target pollutants. If the project uses one of these BMPs, go to step 2 to calculate how many points are earned.

TABLE PD-30.1.A. EFFECTIVE BMPS AND INFILTRATION/VOLUME REDUCTION

Target Pollutant	BMP					
	Detention Pond	Wet Pond	Wetland	Biofilter	Media Filter	Infiltration /LID ¹
Suspended Solids	X	X	X	X	X	X
Total Copper	X			X		X
Dissolved Copper		X		X		X
Total Lead		X		X	X	X
Dissolved Lead		X				X
Total Zinc		X	X		X	X
Dissolved Zinc				X		X
Total Phosphorus ²		X	X	-		X

1 – Provide 100% infiltration for the water quality storm/volume using a pond, LID techniques, or a combination.

2 – Phosphorus or other additional basin-specific pollutant

Step 2 Calculate the Target Impervious Surface Area Treated as a percentage of added impervious surface area). For retrofit projects, use Table PD-30.1.B to calculate the equivalent value to use for Target Impervious Surface Area.

TABLE PD-30.1.B. RETROFIT PROJECTS – CALCULATING EQUIVALENT TARGET IMPERVIOUS SURFACE AREA TREATED

Existing Impervious on Project (acres)	% of Existing Impervious Area Treated	Equivalent Target Impervious Surface Area Treated (% of Added)
0–1.0	0–50%	101%–125%
	50.1%–100%	>125%
1.1–5.0	0–40%	101%–125%
	40.1%–100%	>125%
5.1–10.0	0–30%	101%–125%
	30.1%–100%	>125%
>10.0	0–20%	101%–125%
	20.1%–100%	>125%

Step 3 Use the Target Impervious Surface Area Treated that was calculated in Step 2 in Table PD-30.3.C to determine the points earned for this scoring requirement.

TABLE PD-30.3.C. POINTS EARNED FOR EFFECTIVE BMPS BASED ON TARGET IMPERVIOUS SURFACE AREA TREATED

(Step 1)	(Step 2)	(Step 3)
Effective BMP/Infiltration/LID Used?	Target Imp. Surface Area Treated (% of Added)	Points Earned
Yes	101%–125%	2
	125% +	3

Resources

Above-Referenced Resources

The following resources are referenced in this criterion and consolidated here:

1. Environmental Protection Agency, Low Impact Development website, <http://water.epa.gov/polwaste/green/>

Additional Resources

The following resources provide information on this criterion topic in addition to the sources directly referenced:

2. NCHRP, *Report 565: Evaluation of Best Management Practices for Highway Runoff Control* (2006), http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_565.pdf
3. Environmental Protection Agency, Low Impact Development Literature Review, <http://water.epa.gov/polwaste/green/upload/lid.pdf>
4. NCHRP, *Report 792: Long-Term Performance and Life-Cycle Costs of Stormwater Best Management Practices* (2014), http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_792.pdf
5. FHWA, Stormwater Best Management Practices in an Ultra-Urban Setting: Selection and Monitoring website, https://www.environment.fhwa.dot.gov/Env_topics/water/ultraurban_bmp_rpt/index.aspx

Scoring Sources

The project is considered to have met this criterion if the requirements above can be reasonably substantiated through the existence of the following documentation sources (or equal where not available):

1. Project Drainage Report or other relevant calculations and studies.
2. Project Contract Documents.