

CITY OF KIRKLAND

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DEPARTMENT OF PUBLIC WORKS PRE-APPROVED PLANS POLICY

Policy L-1: FEASIBILITY OF STORMWATER LOW IMPACT DEVELOPMENT (LID)

Applicants for projects meeting the threshold for drainage review (except Small Project Type I) must evaluate the feasibility and applicability of full dispersion and full infiltration. If full dispersion and full infiltration is not feasible, the applicant must still implement one or more stormwater LID best management practices (BMP) for a portion of the site.

The Stormwater LID Feasibility Evaluation Worksheets that accompany this policy are intended to be used by the applicant to aid in the feasibility determination. Some factors that can determine feasibility are: physical limitations of the site, engineering limitations, and financial costs. Applicants should submit the Stormwater LID Feasibility Evaluation Worksheets, along with other documentation (if applicable), with the permit application. Applicants should consult the 2009 King County Surface Water Design Manual (KCSWDM), section 5.2.1, for specific criteria of the evaluation process.

City policy is to require the installation of stormwater LID to the maximum extent feasible. The City also acknowledges that stormwater LID may not work on every site. If the evaluation indicates standard LID options listed in the worksheets may not be feasible, please contact City surface water staff at (425) 587-3800 to discuss site specifics. City staff may be able to assist applicants with other LID options.

Regardless of stormwater LID feasibility, the applicant must meet all flow control and water quality treatment requirements applicable to the project. LID BMPs can be counted towards those requirements. All stormwater LID BMPs must be designed and installed according to the 2009 KCSWDM, COK Addendum, and the PW Pre-Approved Plans.



**Stormwater Low Impact Development (LID)
Feasibility Evaluation Worksheet
For Small Project Type II¹ & Targeted² Projects**

The purpose of this form is to assist the applicant evaluate the feasibility of stormwater LID. This form should be submitted along with the permit application.

Date:	
Project Name:	
Project Address:	
Parcel Number(s):	
Applicant/Design Engineer Firm and Name:	
Project Use: SFR <input type="checkbox"/> MF <input type="checkbox"/> COM <input type="checkbox"/> IND <input type="checkbox"/> TRANSPORTATION <input type="checkbox"/>	
Type of Drainage Review: Small Project Type II <input type="checkbox"/> Targeted <input type="checkbox"/>	
Site Area (sq. ft.):	Roof Area (sq. ft.):

- Applicants are required to evaluate the feasibility and applicability of **full dispersion** for the entire roof area or an area of equivalent size on a project.

Feasibility items to consider for Dispersion	Yes	No
Does the site contain open space available for dispersion? (100ft flowpath)		
The site does not contain steep slopes, and is not located adjacent to a steep slope? (15% or greater)		
The site does not contain sensitive areas, and is not located adjacent to a sensitive area? (stream, wetland, or lake)		
Is dispersion not likely to cause or aggravate potential flooding or erosion problems to neighboring properties?		

Comments _____

Is **full dispersion** of entire roof area (or an equivalent area) feasible? Yes No

¹Type II project refers to small projects creating between 2,000 and 5,000ft² new impervious (see Policy D-3 for full definition)

²Targeted project refers to small projects creating between 2,000 and 5,000ft² new impervious, but also contains sensitive areas or other issues triggering more review than type II (see Policy D-2 for full definition).

2. If dispersion is not feasible, applicants are required to evaluate the feasibility and applicability of **full infiltration** for the entire roof area or an area of equivalent size on a project.

Feasibility items to consider for Infiltration	Yes	No
Has a soil report/evaluation been prepared for the site?		
If so, does the soil report/evaluation indicate soil favorable for infiltration? (Type A or B)		
Does the UW soils map information indicate soil favorable for infiltration? Use the website below if a soil report or evaluation has not been prepared. http://geomapnw.ess.washington.edu/index.php?toc=maintoc&body=services/geodata/geodata.htm		
The site does not contain steep slopes, and is not located adjacent to a steep slope? (15% or greater)		
The site does not contain sensitive areas, and is not located adjacent to a sensitive area? (stream, wetland, or lake)		
Is infiltration not likely to cause or aggravate potential flooding problems to neighboring properties?		

Comments

Is **full infiltration** of entire roof area (or equivalent area) feasible? Yes No

3. Are there factors other than site constraints that would make full dispersion or infiltration not feasible for this site (like engineering limitations or financial costs)? Yes No

If yes, provide explanation _____

4. If both full dispersion and full infiltration is not feasible, then **one or more of the BMPs listed below must be applied** for an area equal to 10% of this project site for sites up to 11,000ft², and 20% for sites between 11,000ft² and 22,000ft². Select which LID BMP option is proposed for this project (listed in order of preference):

- Limited Infiltration (Appendix C, section C.2.3)
- Basic Dispersion (Appendix C, section C.2.4)
- Rain Garden (Appendix C, section C.2.5)
- Permeable Pavement (Appendix C, section C.2.6)
- Rainwater Harvesting (Appendix C, section C.2.7)
- Vegetated Roof (Appendix C, section C.2.8)
- Reduced Impervious Surface Credit (Appendix C, section C.2.9)
The reduction in impervious surface area below maximum lot coverage must be assured through covenant and/or alternative design of impervious surface area. Reduction techniques include: restricted footprint, wheel strip driveways, minimum disturbance foundation, and open grid decking over pervious surface. See specific criteria in section C.2.9.
- Native Growth Retention Credit (Appendix C, section C.2.10)
Credit for preserving native growth at the rate of 1 sq ft impervious requires 3.5 sq ft of native vegetated surface.



**Stormwater Low Impact Development (LID)
Feasibility Evaluation Worksheet
Full Project Review**

The purpose of this form is to assist the applicant evaluate the feasibility of stormwater LID. This form should be submitted along with the permit application. The need for minimum flow control and water quality treatment measures still applies to the project, regardless of LID feasibility.

Date:	
Project Name:	
Project Address:	
Parcel Number(s):	
Applicant/Design Engineer Firm and Name:	
Project Use:	SFR <input type="checkbox"/> MF <input type="checkbox"/> COM <input type="checkbox"/> IND <input type="checkbox"/> TRANSPORTATION <input type="checkbox"/>
Site Area (sq. ft.):	Target Impervious Surface¹ Area (sq. ft.):

- Applicants are required to evaluate the feasibility and applicability of **full dispersion** for all target impervious surface area on a project.

Feasibility items to consider for Dispersion	Yes	No
Does the site contain open space available for dispersion? (100ft flowpath)		
The site does not contain steep slopes, and is not located adjacent to a steep slope? (15% or greater)		
The site does not contain sensitive areas, and is not located adjacent to a sensitive area? (stream, wetland, or lake)		
Is dispersion not likely to cause or aggravate potential flooding or erosion problems to neighboring properties?		

Comments _____

Is **full dispersion** of all target impervious area feasible? Yes No

¹Target impervious surface means that portion of a site's existing, new, and replaced impervious surface from which runoff impacts are required to be mitigated by a particular set of drainage requirements.

2. Are there factors other than site constraints that would make full dispersion or infiltration not feasible for this site (like engineering limitations or financial costs)? Yes No

If yes, provide explanation _____

3. For that portion of the target impervious surface where full dispersion is not feasible, then **one or more of the BMPs listed below must be applied** to a portion of the site's impervious surface area, based on the amount of impervious area on site:

- For projects with 45% to 65% impervious in the developed condition, apply at least 1 LID BMP to at least 20% of the site/lot area or 40% of the target impervious surface (whichever is less).
- For projects with more than 65% impervious in the developed condition, apply at least 1 LID BMP to at least 10% of the site/lot area or 20% of the target impervious surface (whichever is less).

Select which LID BMP option is proposed for this project (listed in order of preference):

- Full Infiltration (Section 5.4)
- Limited Infiltration (Appendix C, section C.2.3)
- Basic Dispersion (Appendix C, section C.2.4)
- Rain Garden (Appendix C, section C.2.5)
- Permeable Pavement (Appendix C, section C.2.6)
- Rainwater Harvesting (Appendix C, section C.2.7)
- Vegetated Roof (Appendix C, section C.2.8)
- Reduced Impervious Surface Credit (Appendix C, section C.2.9)
The reduction in impervious surface area below maximum lot coverage must be assured through covenant and/or alternative design of impervious surface area. Reduction techniques include: restricted footprint, wheel strip driveways, minimum disturbance foundation, and open grid decking over pervious surface. See specific criteria in section C.2.9.
- Native Growth Retention Credit (Appendix C, section C.2.10)
Credit for preserving native growth at the rate of 1 sq ft impervious requires 3.5 sq ft of native vegetated surface – in other words, for every 3.5 sq ft of native vegetation area preserved, 1 sq ft of target impervious surface may be credited as mitigated.