Barriers to Implementing Low Impact Development in the City of Renton

Prepared by

City of Renton

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Introduction

Low impact development (LID) is an approach to stormwater management that seeks to mimic the natural hydrologic functions of stormwater runoff prior to development. At its core, LID is a land use management philosophy that seeks to protect natural resources, prevent pollution, minimize adverse environmental impacts, and improve quality of life through green infrastructure and sustainable development. In general, LID techniques emphasize infiltration and evapotranspiration to remove pollutants and attenuate flows from urban runoff. LID practices can be applied to a variety of development types, including residential, commercial, industrial, and recreational development.

This report identifies barriers to implementing LID approaches in the City of Renton. Barriers were identified through a literature review and internal discussions with City departments.

1. Barriers for LID implementation

Category of Barrier	Barrier	Barrier Description
Physical	Site infeasibility	Space limitations; topography; soil suitability; high groundwater; drainage area; groundwater protection areas; aquifer protection areas; steep slopes; floodplains; proximity to wetlands; critical areas; contaminated soils; setback requirements.
Technical	Inconsistent definition	Disagreement on the techniques that have been identified as LID.
	Unknown life cycle cost	Lack of understanding about what LID will cost to design, construct, and maintain in comparison to conventional stormwater approaches.
	Unknown risks	Lack of long-term performance data and maintenance requirements; access; role in water quality protection.
	Conflict with other requirements	Violation to IDDE requirement of the NPDES Phase II Permit.
	Right-of-way implementation (ROW)	Conflicts with pedestrian access needs, other ROW uses and ADA access requirements; load capacity; aesthetics; spill containment; limits availability of space in ROW; conflicts with other public and private utilities.
Institutional	Lack of education and training	LID is a new concept most City departments are not familiarized with.
	Risk aversion	Environmental priorities may challenge priorities of safety.
	Limited alternatives and design criteria	LID applications limited to the ones approved by Ecology and included in the KCSWDM.

Funding	Lack of funding	New type of infrastructure that increases design, construction and maintenance cost.
Liability	Risk of claims for damage or injury	Increased risk to City due to LID systems failure, slip or tripping hazard. Contaminated soils and groundwater.

2. LID practices currently available and that can be reasonably implemented

The following are examples of LID techniques that are allowed in the City of Renton. These examples were identified through both stakeholder reviews and a literature review.

Non structural LIDs		
Non–structural LID Techniques	**Barriers**	**Description**
Site analysis	Some	Lack of education and training of LID implementation.
Vegetation conservation	Some	A flow control BMP covenant shall be recorded. Conflicts with comprehensive land use plan and GMA requirements.
Narrow road widths	Some	Limited to residential access.
Reduced setbacks	Some	Setback reductions are based on land use; reductions allowed in commercial and residential.
Cluster development	Some	Limited depending on the zoning. A covenant shall be recorded.
Clearing and grading	Some	Due to topography and allowed land use, full site grading may be needed.
Preserve native vegetation	Some	Conflicts with zoning and GMA density requirements.
Vegetated strip	Some	City amended the code to require 8' vegetated strip to accommodate green infrastructure such as rain gardens. Difficult to implement in existing developed areas. Conflict with other ROW uses.

Soil amendment	Some	Required for all projects that will result in 7,000 sf or more of land disturbing activity. Recommended for all landscape projects even under the 7,000 threshold. Implementation by engineering, development community and inspectors in the field is challenging.

3. Goals and metrics to identify, promote, measure LID

Based on the barriers identified, it is recommended that the City:

- Research LID techniques in sites where implementation of LIDs was implemented and/or was considered infeasible.
- Build consensus around definitions, characteristics and requirements of LID.
- Aggressively educate engineers, plan reviewers, and other City staff about LID.
- Develop a stronger vision for implementation of LID for projects within ROW with specific goals and targets.
- Resolve ROW use conflicts.
- Bring stormwater to the beginning of the design process.

4. Potential planned schedule to require and implement LIDs to a broader scale

The City already requires the implementation on LIDs. Structural LIDs are required for all projects resulting in 2,000 sf or more of new plus replaced impervious surface or projects that result in less than 2,000 sf of new plus replaced impervious surface but connection to the City's storm system is not feasible.

Non-structural BMPs are encouraged but not required as part of the designed process. Unless the project results in more than 7,000 sf of land disturbing activity and the use of amended soils is required.