

LID Briefing for NPDES Permittees

Integrating LID into Codes & Standards



Introduction

PRESENTATION OVERVIEW

- Middle of a 4-5 year training process
 - Permittees
 - Engineers
 - Landscapers
 - Realtors
 - Composters
- Objective: Discuss the integration of LID into local codes and standards. This will include the steps needed to accomplish LID code integration.

Introduction

NPDES Phase I & Phase II permits

- Reissued Phase I permit & first issued Phase II permits in 2007
- The Western WA permits were appealed to the Pollution Control Hearings Board (PCHB)
- PCHB decisions compelled Ecology to prepare a requirement in the 2012 permits to require LID unless infeasible
- You know the “rest of the story”

Updating Codes and Standards



Western WA Phase I & Phase II NPDES permit overview

- LID required, where feasible
- Review & amend local codes & standards
- Site & subdivision scale requirements
- Small, medium and large projects

Updates to Codes and Standards

LID BMPs identified in the permit

- Key best management practices (BMPs) required where feasible
- Optional BMPs that permittees may opt to allow or require
- Key LID principles

Updates to Codes and Standards

Required BMPs (unless infeasible) Bioretention



Updates to Codes and Standards

Required BMPs (unless infeasible) Permeable Pavement



Updates to Codes and Standards

Required BMPs (unless infeasible)

Rain Gardens (small projects only)



Updates to Codes and Standards

Required BMPs (unless infeasible) Dispersion



Updates to Codes and Standards

Required BMPs (unless infeasible)

Downspout Dispersion



Updates to Codes and Standards

Required BMPs

(unless infeasible)

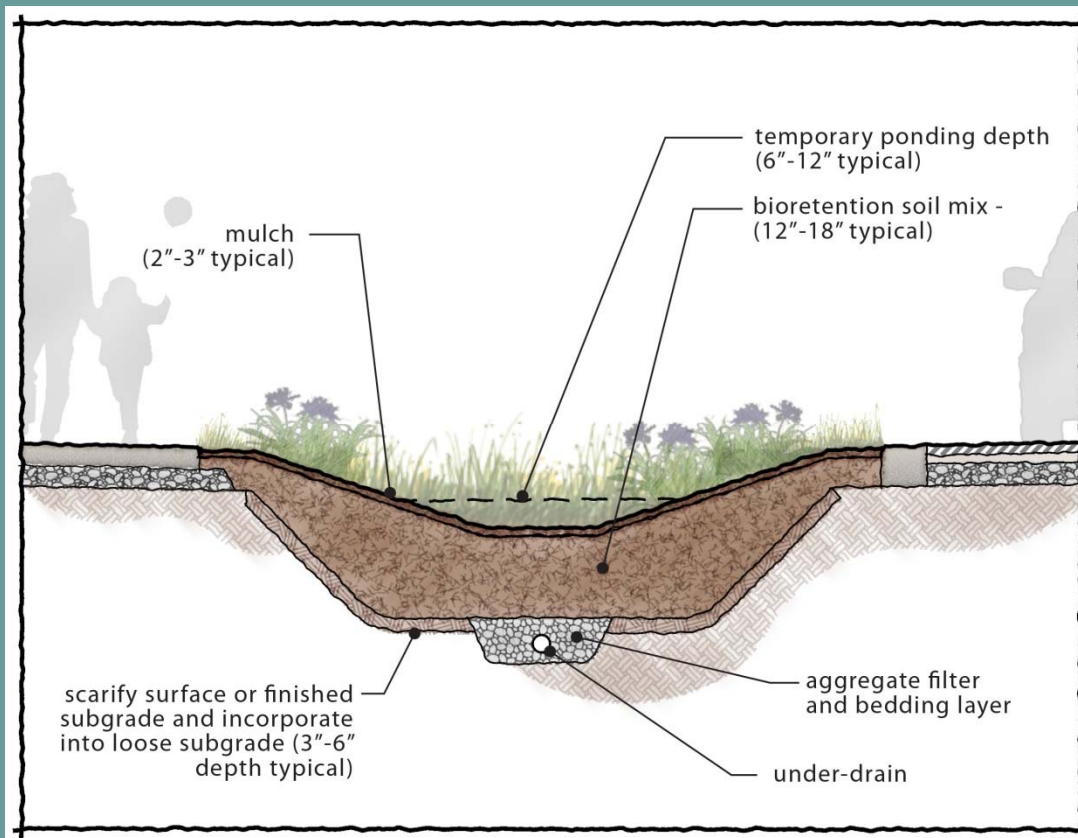
Sheet Flow



Updates to Codes and Standards

Required BMPs (unless infeasible)

Perforated stub-out connections



Updates to Codes and Standards

BMPs — permittees may opt to allow or require
Vegetated roofs



Updates to Codes and Standards

BMPs — permittees may opt to allow or require Rainwater Harvesting



Updates to Codes and Standards

BMPs — Permittees may opt to allow or require Minimal Excavation Foundations



Updates to Codes and Standards

Development Code Review & Amendment Goals

- Reduce impervious surface
- Protect native vegetation
- Reduce stormwater runoff
- Make LID the preferred and commonly used approach

Updates to Codes and Standards

Development Codes

- Directive
 - Prescriptive
- } Ecology included flexibility for developers & discretion for local government

Updates to Codes and Standards

LID Key Principles

- Permit requires non structural practices integrated into early stages of project design
- LID principles include:
 - Conserve Vegetation
 - Reduce & Disconnect Impervious Surfaces
 - Distribute small-scale techniques
 - Infiltrate on site

Code amendments for implementing LID principles

- Reduced road width
- Changes in road layout and orientation
- Clustering
- Higher building & smaller footprints
- Parking regulations
- Landscaping using bioretention

Updates to Codes and Standards

Development Code Review & Amendment

Updates to Codes and Standards

DEADLINES:

December 31, 2016 except;

Lewis and Cowlitz - June 30, 2017

Aberdeen - June 30, 2018

- Timing is to be coordinated with major 10 year GMA updates

Updates to Codes and Standards

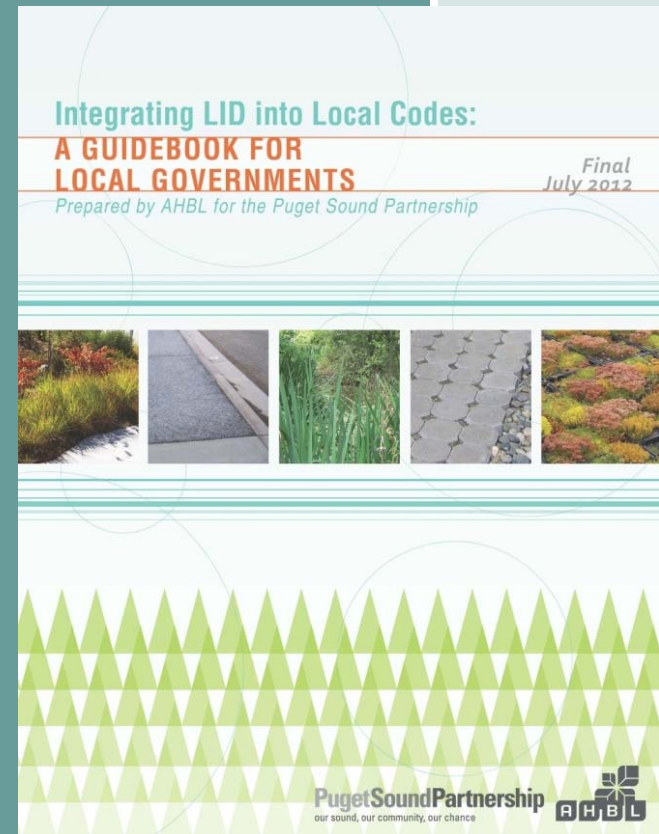
START NOW

- This process is not difficult, but will take time
- Begin thinking with the end in mind

Updates to Codes and Standards

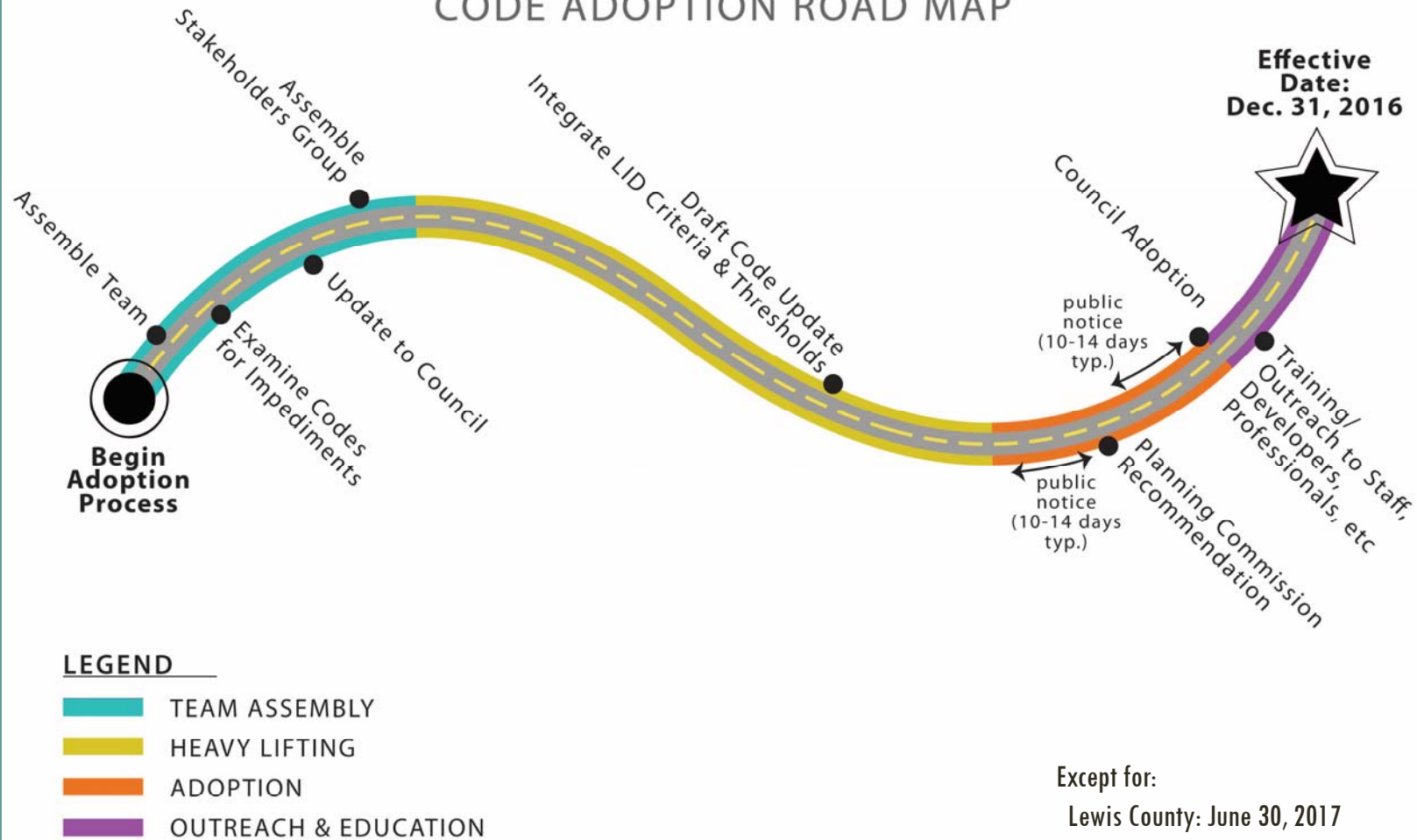
STEPS:

1. Assemble Team
2. Understand LID topics to Address
3. Review Existing Codes & Standards
4. Fill in the Gaps
5. Review & Adopt
6. Implementation



Updates to Codes and Standards

CODE ADOPTION ROAD MAP



Except for:

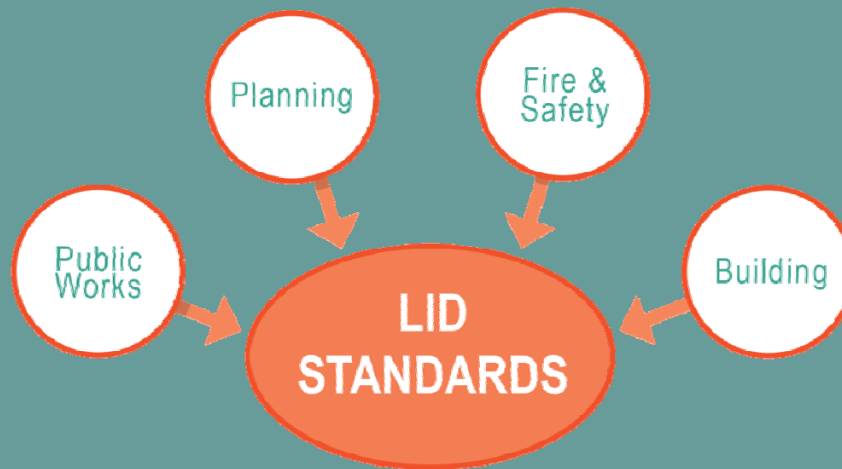
Lewis County: June 30, 2017

Aberdeen: June 30, 2018

Updates to Codes and Standards

1. Assemble Team

- Large undertaking that will require you to assemble a team of various departments to work together
 - public works, planning, fire marshal, building, maintenance/inspections, etc.

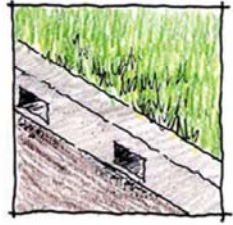
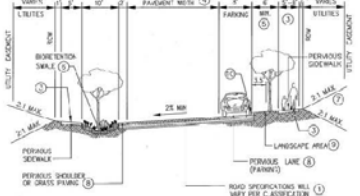


2. Understand LID topics to Address

- Site planning
- Healthy soils
- Landscaping, native vegetation & street landscaping
- Hard & impervious surfaces
- Bulk & dimensional standards
- Clearing & grading
- Streets & roads
- Parking
- Design Guidelines & Standards
- Stormwater & maintenance management
- Subdivision & planned use development
- Critical areas & shoreline management

Updates to Codes and Standards

3. Review Existing Codes & Standards

BENCHMARK/OBJECTIVE	CODE REFERENCE AND SUMMARY OF EXISTING STANDARD	GAP BETWEEN EXISTING STANDARD AND BENCHMARK (OPPORTUNITY TO IMPROVE)
<p>Are curb and gutters required for most residential street sections?</p> 	<p>§ 9-4.159 – Curbs, Gutters and Sidewalks</p> <p>Standard Drawing Nos. 401, 402, 405</p>	<p>Yes. Within the urban services line, residential street sections (local) are required to have curb and gutter. Outside the urban services line, rural street sections are not required to have curb and gutter.</p>
<p>Do adopted street sections allow for the use of open treatment and conveyance of stormwater within landscape strips?</p> 		<p>The code is silent on this design alternative.</p>

Updates to Codes and Standards

3. Review Existing Codes & Standards

Review Form Example Template

Name of Document/Code/Policy Reviewed: _____

Purpose of Review Form: The purpose of this review form is to provide a template for tracking the review process for integrating low impact Development (LID) into local codes, rules, standards, and other enforceable documents. A separate form is recommended for each code chapter (or subsection) and document that is reviewed. The form is organized into the major topic categories identified in *Integrating LID into Local Codes: A Guidebook for Local Governments*. Recommended subtopics for review are identified under each of the major topic categories. Refer to the **Subtopic Focus Sheets** for more information on the importance of each subtopic and questions to consider during the review process. A similar form was successfully used by the City of Seattle and the City of Arlington during their review processes. This form is not required to be used for permit compliance and can be modified, as needed, to incorporate additional review topics or tracking items.

Step 1	Step 2—{WHAT}	Step 3—{WHERE}	Step 4—{Fill the GAPS}	Step 5	Step 6		
	WHAT topics did you review?	WHERE are the gaps?	What steps have you taken to FILL THE GAPS?				
	Topic/Sub Topics	Topic Reviewed	Conflict/Gap Identified	Section/Page Reference	Summary of Existing Text	Summary of Conflict/Gap	Steps Taken

Topic: Site Planning and Assessment

Building locations	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Does not apply	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Does not apply					<input type="checkbox"/> Amended existing code <input type="checkbox"/> Developed new code <input type="checkbox"/> Decided not to incorporate any changes If you decided not to incorporate any changes, explain why :
Parking area locations	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Does not apply	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Does not apply					<input type="checkbox"/> Amended existing code <input type="checkbox"/> Developed new code <input type="checkbox"/> Decided not to incorporate any changes If you decided not to incorporate any changes, explain why :
Stormwater treatment/flow control BMP/facility locations	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Does not apply	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Does not apply					<input type="checkbox"/> Amended existing code <input type="checkbox"/> Developed new code <input type="checkbox"/> Decided not to incorporate any changes If you decided not to incorporate any changes, explain why :

Topic: Healthy Soils

Protecting and restoring healthy soil	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Does not apply	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Does not apply					<input type="checkbox"/> Amended existing code <input type="checkbox"/> Developed new code <input type="checkbox"/> Decided not to incorporate any changes If you decided not to incorporate any changes, explain why :
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Updates to Codes and Standards

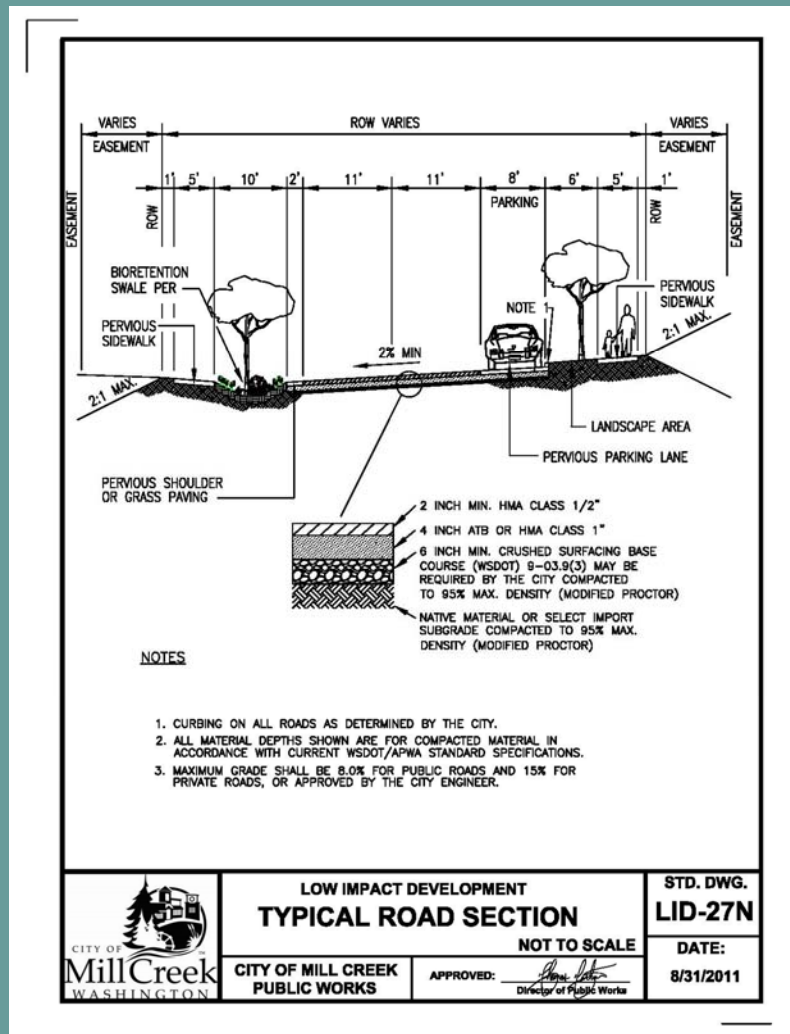
4. Fill in the Gaps

City of Newcastle. 18.21.080 Native vegetation areas.

- A. For the purposes of this Chapter, native vegetation areas shall have a tree density of one native tree for every 600 square feet.
- B. Native vegetation area includes native, undisturbed areas or rehabilitation of previously disturbed areas. Native vegetation areas may integrate passive recreation facilities. Active recreation areas shall not count towards native vegetation areas total.
- C. For the purposes of calculating the required native vegetation area required in 18.21.050-1, inundated lands shall not be included; however, other sensitive areas and their buffers may be included within the Native Vegetation Area boundaries. Land below an ordinary high water mark shall not be counted towards the required native vegetation.
- D. Native Vegetation Areas shall be forested or reforested.
 - 1. Native Vegetation Areas that do not contain sufficient tree canopy coverage shall be planted with native or near native trees at the minimum tree density specified in 18.21.080(A) and shall be replanted in accordance with 18.16.090(C) and (D) for broadleaf and evergreen trees, respectively. This requirement does not apply to areas addressed by Chapter 18.24.
 - 2. Native Vegetation Areas shall be planted with vegetation that is indigenous to the Pacific Northwest or suitable for the Pacific Northwest climate.
 - 3. A minimum of 25% replanted trees shall be of deciduous species and a minimum of 25% replanted trees shall be coniferous species.
- E. Existing native vegetation, forest litter, and understory shall be preserved to the extent possible in the Native Vegetation Areas in order to reduce flow velocities and encourage the dispersion of the storm water on the site. Runoff discharged into native

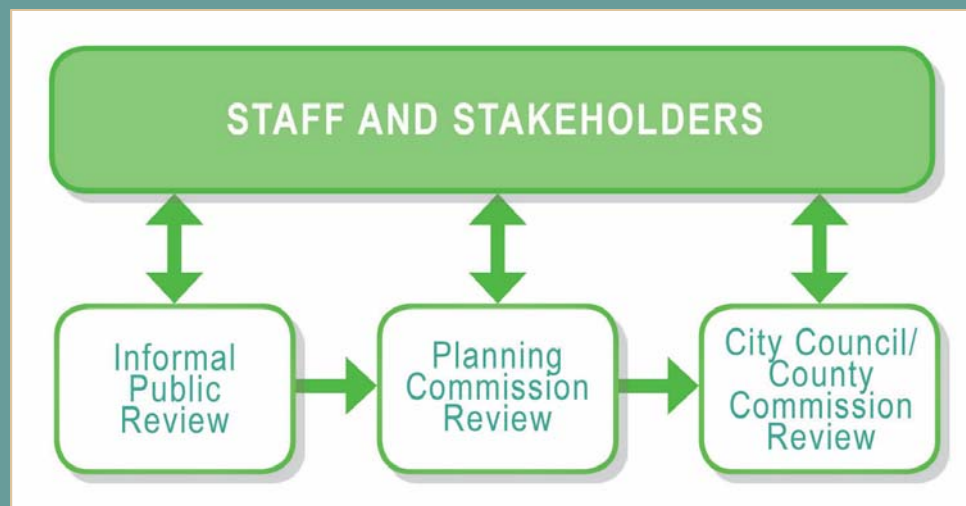
Updates to Codes and Standards

4. Fill in the Gaps



Updates to Codes and Standards

5. Review & Adopt

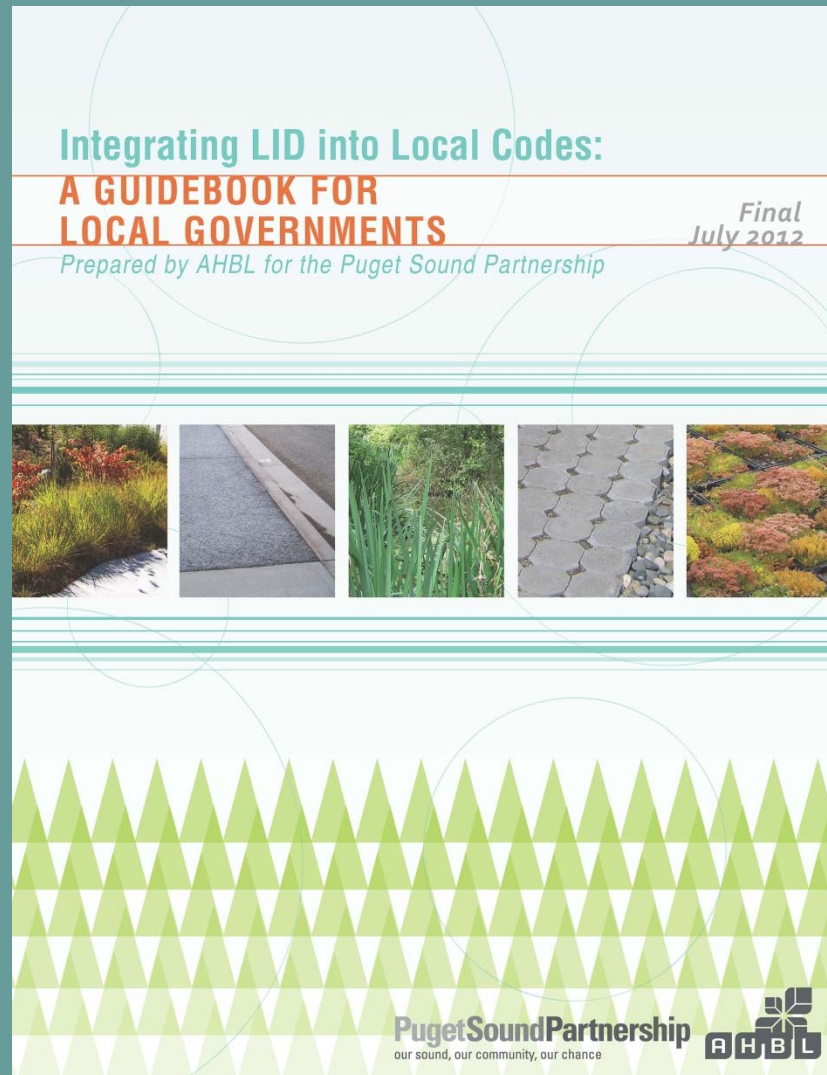


6. Implementation

- The change to LID will represent a paradigm shift that will affect the way you do business
 - Education & Training
 - Maintenance
 - Cost (short & long term)

Updates to Codes and Standards

Integrating LID into Local Codes: A Guidebook for Local Governments



Updates to Codes and Standards

LID Code Update and Integration Toolkit

Low Impact Development

Code Update and
Integration

Toolkit

Worksheets and resources to
help Phase II jurisdictions
integrate Low Impact
Development into local codes,
rules, standards, and other
enforceable documents



DEPARTMENT OF
ECOLOGY
State of Washington

JULY 2014



Questions & Evaluation

THANK YOU!

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