Low Impact Development
Code Update and Integration
Training
Project Team

Cascadia Consulting Group

Herrera

Veda Environmental

CPD Solutions

Association of Washington Cities
Instructors

Gretchen Muller
Senior Associate

Rebecca Dugopolski
Senior Engineer
Logistics

Schedule

- 4-hour training with one break

Other Logistics

- Restroom location
- Food
- Turn off cell phones
- Be sure to sign in & sign out
Program Overview
Program Overview

- 8 trainings from September 2014 – June 2015
Training Goal

To equip Phase II jurisdictions throughout WA with the knowledge and tools needed to update codes/regulations
Training Objectives

- **Discuss** permit requirements/timelines
- **Review** process/responsibilities
- **Provide six steps** to LID code updates/integration
- **Provide solutions** to challenges/barriers
- **Walk through** real-world examples
- **Discuss opportunities** for ongoing support
Agenda

1. Overview of permit requirements
2. Six steps to LID integration (steps 1-4)
3. Group activity
4. Six steps to LID integration (steps 5-6)
5. Wrap up/evaluation
1. Overview of permit requirements

2. Six steps to LID integration (steps 1-4)

3. Group activity

4. Six steps to LID integration (steps 5-6)

5. Wrap up/evaluation
## Municipal Stormwater Permittees in Washington State

<table>
<thead>
<tr>
<th>Phase I Permittees</th>
<th>Western Washington Phase II Permittees</th>
<th>Eastern Washington Phase II Permittees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seattle, Tacoma, Clark County, King County, Pierce County, Snohomish County</td>
<td>82 Cities, 5 Counties</td>
<td>18 Cities, 5 Counties</td>
</tr>
</tbody>
</table>

**Secondary Permittees:** Approximately 45; such as ports and universities

To see a listing of permittees visit [http://www.ecy.wa.gov/programs/wq/stormwater/municipal/MuniStrmWtrPermList.html](http://www.ecy.wa.gov/programs/wq/stormwater/municipal/MuniStrmWtrPermList.html)
Phase II Permit Requirements

- Permittees shall allow non-structural preventive actions and source reduction approaches such as:
  - Low Impact Development (LID) techniques,
  - Measures to minimize the creation of impervious surfaces, and
  - Measures to minimize the disturbance of native soils and vegetation

- Provisions for LID should take into account site conditions and long term maintenance
Timeline for reviewing & revising local codes

- Timeline for allowing LID techniques, measures to minimize the creation of impervious surfaces, and measures to minimize the disturbance of native soils and vegetation: December 31, 2017

- Summary of criteria defining infeasibility or a citation for the criteria adopted pursuant to a regional LID manual: March 31, 2018 annual report
Discussion
Overview of permit requirements

Six steps to LID integration (steps 1-4)

Group activity

Six steps to LID integration (steps 5-6)

Wrap up/evaluation
6 Steps to LID Integration

- **Step 1.** Assemble the Project Team
- **Step 2.** Understand General Topics to Address
- **Step 3.** Review Existing Codes and Standards
- **Step 4.** Amend Existing Codes and Develop New Codes
- **Step 5.** Public Review and Adoption Process
- **Step 6.** Moving from Updates to Implementation
Step 1: (Who)

Assemble Project Team

One to three months
Internal Team

- Fire and public safety
- Inspect and review
- Policy
- Building Department
- Planning
- Construction inspection
- Development review
- Stormwater Engineering Review
- Maintenance and inspection
- Public facility operations
- Public Works
- Streets/roads engineering
External Stakeholders

- Agencies owning and maintaining streets
- State/local health department
- Utility providers
- Site designers/engineers
- Citizens or neighborhood groups
- Major property owners/developers
- Special districts
- Environmental groups
Understanding of LID

- A land use development strategy that emphasizes protection and use of on-site natural features to manage stormwater

- Integrates engineered, small-scale stormwater controls into the site design

- Used at the parcel and subdivision scale

- Primary goal: no measurable impacts to receiving waters by maintaining pre-development surface flow volumes and durations
Step 2: (What)

General Topics to Address

One to three months
NPDES Report Requirements

Three review categories

- Measures to minimize impervious surfaces
- Measures to minimize loss of native vegetation
- Other measures to minimize stormwater runoff
You have your interdisciplinary team. Now, what general topics to address?
12 Major Topics

1. Site Planning and Assessment
2. Healthy Soils
3. Landscaping, Native Vegetation, and Street Landscaping
4. Hard and Impervious Surfaces
5. Bulk and Dimensional Considerations
6. Clearing and Grading
7. Streets and Roads
8. Parking
12 Major Topics

9. Design Guidelines and Standards
10. Stormwater Management and Maintenance
11. Subdivision and Planned Unit Development
12. Critical Areas and Shoreline Management
Implementation Worksheet

Table 1. Major Topic Areas, Associated Review Categories, and Recommended Subtopics

<table>
<thead>
<tr>
<th>Topic</th>
<th>Subtopics</th>
</tr>
</thead>
</table>
| Site Planning and Assessment               | - Building locations  
- Parking area locations  
- Stormwater treatment/flow control BMP/facility locations  
- (add subtopic as necessary)            |
| Healthy Soils                              | - Protecting and restoring healthy soil  
- Compost amendments  
- Compaction  
- (add subtopic as necessary)          |
| Landscaping, Native Vegetation, and Street Landscaping | - Tree preservation  
- Screening  
- Landscaping requirements for street frontages  
- Landscaping requirements for parking lots  
- (add subtopic as necessary)     |
| Hard and Impervious Surfaces               | - Maximum impervious surface allowances  
- Shared driveways  
- Minimum driveway width  
- Use of permeable pavement for driveways  
- Two-track driveway design  
- (add subtopic as necessary)        |
## Subtopic Focus Sheet - Landscaping, Native Vegetation, and Street Landscaping

<table>
<thead>
<tr>
<th>Subtopic</th>
<th>Why is it important?</th>
<th>What should I consider during my review?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree preservation</td>
<td>Trees provide flow control by intercepting stormwater. Currently, many codes focus on preservation of significant or heritage trees instead of conifers</td>
<td>• Are there regulatory controls over tree clearance and removal of mature trees/forest stands?</td>
</tr>
</tbody>
</table>
Brainstorm

12 Subtopics
Site Planning and Assessment

- Building locations
- Parking area locations
- Stormwater treatment/flow control
- BMP/facility locations
- What else?
Healthy Soils

- Protecting and restoring healthy soil
- Compost amendments
- Compaction
- What else?
Landscaping, Native Vegetation, and Street Landscaping

- Tree preservation
- Screening
- Landscaping requirements for street frontages
- Landscaping requirements for parking lots
- What else?
Hard and Impervious Surfaces

- Maximum impervious surface allowances
- Shared driveways
- Minimum driveway width
- Use of permeable pavement for driveways
- Two-track driveway design
- What else?
Bulk and Dimensional Considerations

- Building setbacks
- Height limits
- Maximum square footage
- Clustering
- What else?
Clearing and Grading

- Protecting existing infiltration
- Conserving native vegetation/soils
- Construction sequencing
- What else?
Streets and Roads

- Travel lane widths
- Right-of-way (ROW) widths
- Use of permeable pavement for streets and roads
- Placement of utilities under paved areas in the ROW
- Required turn around area
- Sidewalk widths
- Sidewalk slope
- Minimum cul-de-sac radius
- Alternatives to cul-de-sacs
- What else?
Parking

- Minimum/maximum parking ratios
- Use of permeable pavement for parking lots
- Parking stall dimensions
- Driving aisle dimensions
- Off-street parking regulations
- What else?
Design Guidelines and Standards

- Trees and bioretention
- Continuous curb requirements
- Curb radii
- What else?
Stormwater Management and Maintenance

- Maintenance provisions
- Inspection access
- Enforcement
- What else?
Subdivision and Planned Unit Development

- Individual open space requirements
- Passive vs. active open space requirements
- Opportunities for Performance Based Designs
- What else?
Critical Areas and Shoreline Management

- Allowance of LID best management practices in critical areas/shorelines when compatible
- What else?
Step 3: (Where)

Review Existing Codes & Standards

One to three months
Getting Started

- **Develop a list** of codes, rules, standards, and enforceable documents

- **Examples**
  - Comprehensive or Planning Documents
  - Standard Details
  - Engineering and Street Standards
  - Development Design Guidelines and Requirements
  - Zoning, Development, and Subdivision Code
LID Considerations

Example: Planning Documents

- Goals and policies should promote LID
- Goals and policies that present barriers to LID should be modified or removed
- Policies that support dual use of landscaping or open space and LID should be added
- Policies should support minimizing impervious areas
Step 3—{WHERE}

<table>
<thead>
<tr>
<th>WHERE are the gaps?</th>
<th>Section/Page Reference</th>
<th>Summary of Existing Text</th>
<th>Summary of Conflict/Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ No</td>
<td></td>
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<td>☐ Does not apply</td>
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<td>☐ Yes</td>
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<tr>
<td>☐ Does not apply</td>
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</tbody>
</table>
What’s next?

- Assign documents to review (Step 2)
- Meet with others on your internal team to discuss the review results
- Finalize review forms based on input from your internal team
- Consider presenting your results to Council or external stakeholders
Case Study #1
Key staff orientation meeting objectives:

- Understand the scope of the LID “Review and Revise” requirement
- Understand the relationship between this work and Mayor’s Exec. Order on GSI
- Identify critical staffing and document gaps/revisions
- Have a set deadline for feedback on a proposed package to Dept. Directors
- Agree to a team check-in schedule
## City of Seattle

### Documents identified for review:

<table>
<thead>
<tr>
<th>Department</th>
<th>Document(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seattle Public Utilities (SPU)</td>
<td>Standard Plans &amp; Specs (GSI)</td>
</tr>
<tr>
<td></td>
<td>SPU Design Standards</td>
</tr>
<tr>
<td></td>
<td>Stormwater Code &amp; Directors’ Rules</td>
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<tr>
<td></td>
<td>Side Sewer Code &amp; Directors’ Rules</td>
</tr>
<tr>
<td>Seattle Department of Transportation (SDOT)</td>
<td>Right-of-Way Improvements Manual</td>
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<td></td>
<td>SMC Title 15 – Street Use</td>
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<td>Street Tree Manual</td>
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<tr>
<td>Department of Planning and Development (DPD)</td>
<td>Land Use Code</td>
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<td></td>
<td>Building Codes</td>
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<td></td>
<td>Grading Code</td>
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<td></td>
<td>Comprehensive Plan</td>
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<td>ECA Code</td>
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</tbody>
</table>
Documents identified for review (cont.):

<table>
<thead>
<tr>
<th>Department</th>
<th>Document(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Parks and Recreation</td>
<td>Parks Standard Plans &amp; Specifications</td>
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<td></td>
<td>Development Standards</td>
</tr>
<tr>
<td>Department of Neighborhoods</td>
<td>Historic Preservation Rules/Code</td>
</tr>
<tr>
<td>Seattle City Light (SCL)</td>
<td>SCL Standard Plans &amp; Specifications</td>
</tr>
<tr>
<td>Seattle Fire Department</td>
<td>Fire Code</td>
</tr>
</tbody>
</table>
City of Seattle

- Internal team:
  - SPU Lead: Green Infrastructure Advisor
  - SDOT Lead: NPDES Stormwater Program Manager
  - DPD Lead: Urban Designer
  - Parks Lead: Parks Engineering Manager
  - DON Lead: Historic Preservation Officer and Director of the Historic Preservation Program
  - SCL Lead: Environmental Specialist
  - Fire Lead: Fire Marshal
  - Law Lead: Senior Assistant City Attorney
City of Seattle

City of Seattle Report Form
LID – Review & Revise Local Codes

Document/ Code/ Rule/ Standard Reviewed:

Step 1 – **WHO** was part of your Project Team?

<table>
<thead>
<tr>
<th>Name</th>
<th>Job title</th>
<th>Job description</th>
<th>Department</th>
</tr>
</thead>
<tbody>
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</table>
City of Seattle

Step 2 – WHAT topics did you review?

The topics below belong to one or more of the following categories:

- Measures to minimize impervious surfaces
- Measures to minimize loss of native vegetation
- Other measures to minimize stormwater runoff

Step 3 – WHERE are the gaps? Please fill out the following table for any section of the Document/ Code/ Rule/ Standard that may potentially conflict with implementation of LID BMPs based on the topics outlined in Step 2.

Step 4 – Have you taken any steps to FILL THE GAPS? Has alternative language been drafted to address the conflict/gap?

Step 5 – Are you aware of any other City codes/documents that may be affected by the proposed revisions in Step 4?
### City of Seattle

**Step 2: WHAT topics did you review?**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Topics</th>
<th>Step 3 WHERE are the gaps?</th>
<th>Step 4 Have you taken any steps to <strong>FILL THE GAPS?</strong></th>
<th>Step 5 Are you aware of any other City codes/documents that may be affected?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td><strong>Site Planning</strong></td>
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<tr>
<td>Building locations</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<td></td>
<td>No</td>
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<td></td>
<td>Does not apply</td>
<td>Does not apply</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Parking area locations</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<td></td>
<td>No</td>
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<td>Does not apply</td>
<td>Does not apply</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Stormwater management facility</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>locations</td>
<td>No</td>
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<td>Does not apply</td>
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<tr>
<td><strong>Soils</strong></td>
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<tr>
<td>Protecting and restoring healthy</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<td>soil</td>
<td>No</td>
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<td>Does not apply</td>
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<td>No</td>
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<tr>
<td>Compost amendments</td>
<td>Yes</td>
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<td>Yes</td>
<td>No</td>
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<td>No</td>
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<td>Compaction</td>
<td>Yes</td>
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<td>Does not apply</td>
<td>Does not apply</td>
<td>No</td>
<td>No</td>
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</tbody>
</table>
City of Seattle

- Lessons learned:
  - Make sure that proper staffing is in place (within each department) to conduct the review process: Department leads and support staff
  - Ensure that accountable executive level staff are identified in each department
Case Study #2
City of Arlington, WA

- Documents identified for review:
  - Streets and Sidewalks Code (Chapter 12)
  - Stormwater Utility Code (Chapter 13.28)
  - Land Use Code (Chapter 20)
  - Engineering Standards and Specifications
  - Citywide Comprehensive Plan
  - Old Town Design Guidelines
  - Development Design Guidelines
City of Arlington, WA

- Internal team:
  - Stormwater Utility Supervisor
  - Building Official
  - Water Resources Planner
  - Associate Planner
  - Public Works Director
  - GIS Coordinator
  - Community and Economic Development Coordinator
  - City Engineer
Minimum/maximum parking ratio example:

- Land Use Code, Section 20.72.010 – Number of parking spaces required
- Summary of existing text: This section lists the minimum off-street parking space requirements for different uses. Maximum parking space is limited to a maximum of twice the minimum required spaces.
Chapter 20.72 - PARKING

Sections:
20.72.010 - Number of parking spaces required.
20.72.020 - Flexibility in administration required.
20.72.030 - Parking space dimensions.
20.72.040 - Required widths of parking area aisles and driveways.
20.72.050 - General design requirements.
20.72.060 - Parking area surfaces.
20.72.070 - Accessible parking spaces.
20.72.075 - Joint use of required parking spaces.
20.72.080 - Satellite parking.
20.72.082 - Tandem parking.
20.72.084 - Reductions in parking space requirements for provision of alternative transportation.
20.72.085 - Maximum cumulative reduction of required parking spaces.
20.72.090 - Special provisions for sites with existing buildings.
20.72.100 - Loading and unloading areas.
20.72.110 - Bicycle parking facilities.

20.72.010 - Number of parking spaces required.

(a) Except as may be modified by Section 20.76.120 (Retention and Protection of Significant Trees), Section 20.72.084 (Reductions in Parking Space Requirements for Provision of Alternative Transportation) or 20.72.085 (Maximum Cumulative Reduction of Required Parking Spaces), and except as exempted by Subsection (b), all developments in all zoning districts shall provide a sufficient number of parking spaces to accommodate the number of vehicles that ordinarily are likely to be attracted to the development in question.

(b) Except for residential uses or the residential portion of mixed uses, developments in the Old Town Business District 1 are not required to provide parking as per Subsection (a). Residential developments (or portions) in the OTBD 1, however, must comply with Subsection (a).

(c) The presumptions established by this chapter are that: (i) a development must comply with the parking standards set forth in Subsection (f) to satisfy the requirement stated in Subsection (a), and (ii) any development that does meet these standards is in compliance. However, Table 20.72-1: Table of Parking Requirements is only intended to establish a presumption and should be flexibly administered, as provided in Section 20.72.020 (Flexibility in Administration Required).

(d) Uses in the Table 20.72-1: Table of Parking Requirements (Subsection (f)), are indicated by a numerical reference keyed to the Table of Permissible Uses (Section 20.40.010 (Table of Permissible Uses)). When determination of the number of parking spaces required by this table results in a requirement of a fractional space, any fraction shall be counted as one parking space.

(e) The council recognizes that Table 20.72-1: Table of Parking Requirements set forth in Subsection (f) cannot and does not cover every possible situation that may arise.
# Table 20.72-1: Table of Parking Requirements

<table>
<thead>
<tr>
<th>Use</th>
<th>Parking Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.100</td>
<td>2 spaces per dwelling unit plus one space per room rented out (see <a href="#">Section 20.40.050</a> (Accessory Uses))</td>
</tr>
<tr>
<td>1.120</td>
<td>2 spaces per unit plus 1 additional space for every four units in the development, except multi-family units limited to senior citizens require only 2 spaces per unit.</td>
</tr>
<tr>
<td>1.120 (except 1.122)</td>
<td>2 spaces for each dwelling unit, except that one-bedroom units require only one space.</td>
</tr>
<tr>
<td>1.130</td>
<td>2 spaces per unit plus 1 additional space for every four units in the development, except multi-family units limited to senior citizens require only 2 spaces per unit.</td>
</tr>
<tr>
<td>1.400</td>
<td>3 spaces for every five beds except for uses exclusively serving children under 16, in which case 1 space for every three beds shall be required.</td>
</tr>
<tr>
<td>1.510</td>
<td>1 space for each bedroom.</td>
</tr>
<tr>
<td>1.520</td>
<td>1 space for each room to be rented plus additional space (in accordance with other sections of this table) for restaurant or other facilities.</td>
</tr>
<tr>
<td>2.111</td>
<td>1 space per 400 square feet of gross floor area.</td>
</tr>
<tr>
<td>2.111</td>
<td>1 space per 300 square feet of gross floor area.</td>
</tr>
<tr>
<td>2.120</td>
<td>1 space per 800 square feet of gross floor area.</td>
</tr>
<tr>
<td>2.210</td>
<td>1 space per 400 square feet of gross floor area.</td>
</tr>
<tr>
<td>2.220</td>
<td>1 space per 300 square feet of gross floor area.</td>
</tr>
<tr>
<td>3.110</td>
<td>1 space per 400 square feet of gross floor area.</td>
</tr>
<tr>
<td>3.120</td>
<td>1 space per 800 square feet of gross floor area.</td>
</tr>
<tr>
<td>3.130</td>
<td>1 space per 300 square feet of gross floor area.</td>
</tr>
<tr>
<td>3.210</td>
<td>1 space per 400 square feet of gross floor area.</td>
</tr>
<tr>
<td>3.220</td>
<td>1 space per 800 square feet of gross floor area.</td>
</tr>
<tr>
<td>3.230</td>
<td>1 space per 400 square feet of area within main building plus reservoir land capacity equal to 3 spaces per window (5 spaces if window serves two stations).</td>
</tr>
<tr>
<td>4.110</td>
<td>1 space per 800 square feet of gross floor area.</td>
</tr>
<tr>
<td>4.120</td>
<td>1 space for every two employees on the maximum shift except that, if permissible in the commercial districts, such uses may provide 1 space per 400 square feet of gross floor area.</td>
</tr>
<tr>
<td>4.200</td>
<td>1 space per 400 square feet of area.</td>
</tr>
<tr>
<td>5.110</td>
<td>1.75 spaces per classroom in elementary schools, 5 spaces per classroom in high schools.</td>
</tr>
<tr>
<td>5.120</td>
<td>1 space per 200 square feet of gross floor area.</td>
</tr>
<tr>
<td>5.130</td>
<td>1 space per 300 square feet of gross floor area.</td>
</tr>
<tr>
<td>5.200</td>
<td>1 space for every four seats in the portion of the church building to be used for services plus spaces for any residential use as determined in accordance with the parking requirements set forth above for residential uses, plus 1 space for every 200 square feet of gross floor area designed to be used neither for services nor residential purposes.</td>
</tr>
</tbody>
</table>
## Recommendations:

- Consider decreasing ratio of minimum number of parking spaces per building area, setting a more stringent ratio, or requiring larger parking lots to incorporate LID.

- Consider requiring that all parking spaces above the minimum number be constructed as permeable pavement unless infeasible.
Break
Brainstorm on Barriers to LID
Step 4: (Fill the Gaps)

Amend Existing Codes & Develop New Codes

Three to nine months
Filling in the Gaps

- Process to address barriers/gaps
- Solutions to barriers/gaps
Filling in the Gaps

- Update the Review Form to reflect what actions were taken to address gaps and barriers
  - Amend existing code
  - Develop new code
  - Decided not to incorporate any changes (and why)
Filling in the Gaps

Step 4—{Fill the GAPS}

What steps have you taken to FILL THE GAPS?

Steps Taken

- [ ] Amended existing code
- [ ] Developed new code
- [ ] Decided not to incorporate any changes
  If you decided not to incorporate any changes, explain
  why: [ ]

- [ ] Amended existing code
- [ ] Developed new code
- [ ] Decided not to incorporate any changes
  If you decided not to incorporate any changes, explain
  why: [ ]

- [ ] Amended existing code
- [ ] Developed new code
- [ ] Decided not to incorporate any changes
  If you decided not to incorporate any changes, explain
  why: [ ]
Filling in the Gaps

- **Address the gaps** with your list of documents and the actions that were taken
1. Overview of permit requirements

2. Six steps to LID integration (steps 1-4)

3. Group activity

4. Six steps to LID integration (steps 5-6)

5. Wrap up/evaluation
Group Activity – Part One

Part One

- Bring your code language that defines parking and/or landscaping requirements
- Bring your copy of the following:
  - **Subtopic Focus Sheet(s)** “Focus on Landscaping, Native Vegetation, and Street Landscaping” and “Focus on Parking” subtopic focus sheet
  - **Review Form Example Template** for “Topic: Landscaping, Native Vegetation, and Street Landscaping” and “Topic: Parking”
- Group walk-through of example parking requirements
CITY OF EDMONDS: LANDSCAPING

This code/ordinance offers a model of how a Western Washington jurisdiction could update LID codes to reflect new stormwater code requirements.

Chapter 20.13
LANDSCAPING REQUIREMENTS

Sections:

20.13.000  Scope.
20.13.010  Landscape plan requirements.
20.13.015  Plant schedule.
20.13.020  General design standards.
20.13.025  General planting standards.
20.13.030  Landscape types.
20.13.040  Landscape bonds.
20.13.050  Urban design chapter adopted.

20.13.000 Scope.

The landscape requirements found in this chapter are intended for use by city staff, the architectural design board (ADB) and the hearing examiner in reviewing projects, as set forth in ECDC 20.11.010. The ADB and
Group Activity – Part Two, Three, and Four

Part Two
- Break out into groups of 5-8 people

Part Three
- Walk-through example codes (15 minutes per example)
- One at a time (goal of 2-3 additional examples)

Part Four
- Full group discussion
- Lessons learned/best practices
1. Overview of permit requirements

2. Six steps to LID integration (steps 1-4)

3. Group activity

4. Six steps to LID integration (steps 5-6)

5. Wrap up/evaluation
Step 5: (Review and Adopt)

Public Review & Adoption Process

Three to nine months
Public Review & Adoption Process

- Understand amendment process and schedule
- Begin amendment process early to allow for rounds of internal and external review
Internal Review

- Department managers should review proposed changes to the standards.
- Planning commissions should be briefed on the proposed changes to the standards.
External Review

- Stakeholder input
  - Provide informal review opportunity
  - Make changes to amendments

- Public Review
  - Conduct formal public review process
Step 6: (Implement) Ensure successful implementation
Ensure Successful Implementation

- **Identify/prioritize list** of implementation needs
- **Create timeline** to ensure staff have adequate time to address LID project review, implementation, and ongoing maintenance
Ensure Successful Implementation

- **Review and revise** application materials, permit review bulletins, process flow charts, and permitting information available to the public.
Six steps to LID integration (steps 5-6)

Overview of permit requirements

Six steps to LID integration (steps 1-4)

Group activity

Six steps to LID integration (steps 5-6)

Wrap up/evaluation
Wrap Up

- **Project website:**
  http://www.wastormwatercenter.org/lidcodeintegration/

- **Hotline:** (206) 449-1163

- **Listserv:**
  training@cascadiaconsulting.com

- **Resources:** Training Toolkit
**Tell Your Friends!**

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<tr>
<th>CITY</th>
<th>LOCATION</th>
<th>DATE</th>
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<tbody>
<tr>
<td>Mt. Vernon</td>
<td>Mt. Vernon Fire Department</td>
<td>January 14, 2015</td>
</tr>
<tr>
<td>Vancouver, WA</td>
<td>Vancouver City Hall</td>
<td>January 22, 2015</td>
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<td>Auburn</td>
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<td>February, 17, 2015</td>
</tr>
<tr>
<td>Wenatchee</td>
<td>City Council Chambers</td>
<td>March 18, 2015</td>
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</table>
Course Catalog

Statewide
Low Impact Development Training Program

2014-2015 COURSE CATALOG

http://www.wastormwatercenter.org/lidswtrainingprogram/
Other Course Offerings

**INTRODUCTORY**

1.0 Introduction to LID for Eastern Washington

2.1 Introduction to LID for Inspection & Maintenance Staff

2.2 Introduction to LID for Developers & Contractors: Make Money be Green

**INTERMEDIATE**

3.1 Intermediate LID Topics: NPDES Phase I & II Requirements

3.2 Intermediate LID Design: Bioretention

3.3 Intermediate LID Design: Permeable Pavement

3.4 Intermediate LID Design: Site Assessment, Planning & Layout

3.5 Intermediate LID Design: Rainwater Collection Systems & Vegetated Roofs

4.1 Intermediate LID Design: Hydrologic Modelling

4.2 Intermediate LID Design: Bioretention Media

4.3 Intermediate LID Design: Permeable Pavement

4.4 Intermediate LID Design: Site Assessment, Planning & Layout

4.5 Intermediate LID Design: Rainwater Collection Systems & Vegetated Roofs

4.6 Intermediate LID Design: Hydrologic Modelling

5.1 Advanced Topics in LID Design: Bioretention

5.2 Advanced Topics in LID Design: Permeable Pavement

5.3 Advanced Topics for Long-term LID Operations: Bioretention

5.4 Advanced Topics for Long-term LID Operations: Permeable Pavement

5.5 Advanced Topics in LID Design: Site Assessment, Planning & Layout

5.6 Advanced Topics in LID Design: Rainwater Collection Systems & Vegetated Roofs

5.7 Advanced Topics in LID Design: Bioretention Media

6.0 Advanced Topics in LID Design: Hydrologic Modeling

7.0 Advanced Topics in LID Design: Site Assessment, Planning & Layout

8.1 Advanced Topics in LID Design: Rainwater Collection Systems & Vegetated Roofs

8.2 Advanced Topics in LID Design: Bioretention Media

**TRAIN THE TRAINEERS**

9.1 Service Providers
For information about upcoming trainings and other resources, visit the Washington Stormwater Center website:

http://www.wastormwatercenter.org

Stay connected through Social Media:

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- Sign up to follow and get Tweets
Online Evaluation

- **An on-line evaluation** will be sent to you following this training
Questions?

training@cascadiaconsulting.com

(206) 449-1163