The Puget Sound Action Team’s Multi-year Effort to Bring LID to Puget Sound

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Presentation Overview

• Since 2001, LID has taken off in the Puget Sound region. The Action Team, with regional partners, has played key role in this.

• The 2005-06 LID Local Regulatory Assistance Program is unique in its size and scope.

• Despite progress, LID is still not standard operating procedure in Puget Sound region. What are the most pressing needs to continue the paradigm shift?
Puget Sound: 110 cities, 12 counties

Currently 4 million residents. Another 1.4 million projected by 2025

2000-06: 315,000 more people in region

Fantastic array of freshwater and marine species showing significant decline. See State of the Sound 2007
Some of the unique considerations of Puget Sound Region

Plus side:
• Some history: Focus on the Sound started in ‘80s
• Large, stable NEP office with state standing
• Threats to icon species increases attention

Challenges:
• Strong flow control standard makes it difficult to just use LID practices
• Many areas tough to infiltrate (till soils)
• Majority of rainfall October – April
• Many residents don’t appreciate problems
Action Team’s Strategy to Promote LID in Region (2000 – Present)

1. Form partnerships
2. Add LID to state, regional policy
3. Increase basic awareness & knowledge
4. Provide tools and guidance, and seek to answer pressing questions
5. Target identified regulatory barriers
1. Form Partnerships

Early implementers & interested parties sought out:

- University of Washington & Washington State University Extension
- Local governments
- Private engineering firms
- Ecology, other state agencies
- Local homebuilders associations
- EPA Region 10
2. LID in State & Regional Policy 2000-05

- 2000 Puget Sound management plan
- Puget Sound biennial recovery plans: 2001-present
- State stormwater manual: LID practices and flow control “credits”
- Highway runoff manual
- Federal services & state salmon recovery planning
3. Increase knowledge & awareness

- 2001 regional/national conference
- 2002 follow up regional workshops
- Ongoing, on-call presentations
- University of WA & other training classes
- Educational & technical brochures, case studies, guidance
4. Provide Tools & Resources

• Brochures, case studies & technical guidance for lay and technical audiences

• Extensive web site

• Model PPT show

• Monitoring & research
LID Technical Manual

• Provides common understanding of LID
• Partnership project with WSU Extension & State Dept of Ecology
• Tailored to Puget Sound
• Complements Ecology stormwater manual
• Technical specifications & research findings
LID Technical Manual Contents

- Site assessment
- Site planning/layout
- Vegetation protection
- Clearing and grading
- Integrated practices
- Flow control credits

Large lot sample design from LID Technical Guidance Manual for Puget Sound, 2005
Detailed information on 6 practices

• Bioretention
• Amended soils
• Permeable pavement
• Vegetated roofs
• Rainwater harvesting
• Minimal excavation foundations

NW Seattle, courtesy of Seattle Public Utilities
Flow control credits in LID guidance manual & state manual

- Users represent LID techniques in state model to reduce detention requirements
- Flow control “credits” for:
  - Full or partial dispersion
  - Bioretention
  - Pervious pavement
  - Vegetated roofs
  - Minimal excavation foundations
  - Reverse slope sidewalks
  - Rainwater harvest systems
5. Remove regulatory barriers: LID Local Regulation Assistance

- 2005-06: Action Team led effort to help 19 cities and counties add LID to regulations
- Funding from state (Ecology) and federal (EPA Region 10)
- No local match required, just commitment
- Competitive process. Very strong demand drove expanded assistance
Puget Sound LID Local Regulation Assistance Project

- **Process**: Face to face meetings, multiple drafts of products, final products delivered in large binder and electronically.
- **Products**: Revised draft regulations in legislative format, entire new chapters, engineering designs, maintenance needs, cost comparisons, etc.
- Summaries on Action Team website. Possible to order complete recommendations on CD.
- Action Team staff help with adoption process.
- Adoption is happening, but slow process.
Puget Sound LID Local Regulation Assistance Project

- Local codes reviewed, revised:
  - Minimum native vegetation protected/restored; maximum limits on impervious surfaces; landscaping; tree protection
  - Subdivision and planned unit developments
  - Public works standards, including roads
  - Parking (residential and commercial)
  - Commercial, especially for drainage, landscaping, parking
Results of Efforts So Far

• Huge increase in use of many techniques. Bioretention & pervious concrete very popular
• Projects occurring in every part of the Sound
• Promoted by many non-governmental groups (development, environmental, community)
• LID now found in permits, and local, state, federal and tribal plans
• Huge increase in state funding next biennium
  – $24.5 million in state budget for retrofits, demonstration projects, training, regulatory assistance
Bioretention at medical center, Olympia

Photo by Bruce Wulkan, Puget Sound Action Team
Pervious concrete
City of Sultan

Photo by Curtis Hinman, WSU
Extension Pierce County
Green roof at City Hall, Seattle

Courtesy of Thor Peterson,
City of Seattle
Rainwater harvesting, San Juan island

Courtesy Northwest Water Source
Minimal Excavation
Foundation
Gig Harbor area

Photo courtesy Rick Gagliano
LID is still not standard operating procedure. Needs:

• Need more projects, with documented costs, performance, longevity & maintenance needs
• Need more training for local staff, developers, builders, contractors, homeowners
• Need greater adoption of state stormwater manual. Flow control standard is incentive.
• Need to refine flow control & treatment credit in state stormwater manual
• Large state budget enhancement will help