AGENDA: BIORETENTION AND SOIL MANAGEMENT

April 10-11, 2012
WSU Puyallup Research and Extension Center • 2606 W Pioneer • Puyallup, WA

Day 1

8:30-9:00 **Introduction**

- Overview of course and instructor introductions
- Course goals
- Overview of need and current status of LID in Puget Sound
- Overview of LID principles and practices

Curtis Hinman, WSU Extension Faculty

Bioretention

9:00-9:30 **Bioretention Basics**

- Types, basic structures and functions
  - Cells
  - Swales
  - Online
  - Offline
  - Slopes
- General trends in application and performance

Curtis Hinman, WSU Extension

9:30-10:15 **Siting and Design Examples**

- Siting considerations
- Infiltration tests
- Design examples
  - Single family lot
  - Right of way
  - Multi-family
  - Commercial

Alice Lancaster P.E., Herrera Environmental Consultants

10:15-10:30 **Break**

10:30-12:00 **Design and Construction**

- Flow entrance/pre-settling
- Ponding area
- Under-drains
  - Types of pipes
  - Bedding and filter materials
- Geotextiles

- Overflow
- Layout, elevation and grade considerations
- Construction considerations
- Bioretention soil mixes
  - Composition and primary performance drivers
  - Infiltration guidelines

Alice Lancaster P.E. Herrera Environmental Consultants, Curtis Hinman WSU Extension

12:00-12:45 **Lunch**

12:45-1:15 **Design and Construction (continued)**

- Plants
  - Selection
  - Siting
  - The rhizosphere, soils structure and bioretention performance
- Mulch

Curtis Hinman, WSU Extension Faculty

1:15-2:15 **Water Quality Treatment**

- Mechanisms
- Performance
- Special considerations (NO3, dissolved metals, phosphorus)
- Long-term performance and fate of trapped pollutants

Curtis Hinman, WSU Extension Faculty

2:15-2:30 **Break**

2:30-4:30 **Site Visit and exercises**

Day 2

Bioretention

8:30-9:15 **Inspection and Verification**

- Construction oversight, sequencing and sediment and erosion control
- Timing and procedures
- Remedies for failing sites

Curtis Hinman, WSU Extension Faculty

9:15-10:30 **Operation and Maintenance**

- Routine activities
- Non-routine activities
- Strategies and agreements

Drena Donofrio, Seattle Public Utilities

10:30-10:45 **Break**

10:45-12:15 **Hydrologic Modeling**

- Types of bioretention facilities
- Modeling tools and methods
- Applications
  - Creek protection
  - Water quality treatment
  - CSO reduction
  - Wetland protection

Robin Kirschbaum P.E. HDR and Alice Lancaster P.E. Herrera Environmental Consultants

12:15-1:00 **Lunch**

1:00-2:30 **Modeling exercises**

2:30-2:45 **Break**

Soil Management

2:45-3:15 **Introduction**

- Soil primer
- Protection of native soil and vegetation
- Goals of compost amendment BMP T5.13

David McDonald, Resource Conservation Planner Seattle Public Utilities

3:15-4:15 **Implementation**

- Determining site soil conditions
- Developing a soil management plan
- Compost
- Amendment options for meeting BMP T5.13
- Construction sequencing and installation

David McDonald, Resource Conservation Planner Seattle Public Utilities

4:15-4:45 **Inspection and Maintenance**

- Timing and activities
- Routine activities
- Non-routine activities
- Strategies and agreements

David McDonald, Resource Conservation Planner Seattle Public Utilities