

AGENDA: BIORETENTION AND SOIL MANAGEMENT

September 10-11, 2014

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, Herrera Environmental Consultants

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, Herrera Environmental Consultants

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. and Curtis Hinman, Herrera Environmental Consultants

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, Herrera Environmental Consultants

1:15-2:45 Hydrologic Modeling

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

Alice Lancaster P.E., Herrera Environmental Consultants and Dustin Atchison P.E., CH2M Hill

2:45-3:00 Break

3:00-4:30 Modeling exercises

Alice Lancaster P.E., Herrera Environmental Consultants

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, Herrera Environmental Consultants

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 Site Visit and exercises

Meadow on the Hylebos

12:15-1:15 Lunch

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, Herrera Environmental Consultants

2:15-2:30 Break

Soil Management

2:30-3:00 Introduction

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

David McDonald, Resource Conservation Planner Seattle Public Utilities

3:00-4:00 **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

4:00-4:30 **Inspection and Maintenance**

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

David McDonald, Resource Conservation Planner Seattle Public Utilities