



Seattle Public Utilities' Codes/Policies Encouraging LID



August 7, 2008





Briefing Overview

Focus: How LID program is Changing Business Practices with respect to Selection of Assets

- I. Green Stormwater Infrastructure (GSI) definition
- II. Lowering Barriers for new construction
- III. Lowering Barriers for retrofit project
- IV. Next steps

Tracy Tackett, LID/GSI Program Manager



Lowering Barriers for new construction

- City of Seattle Stormwater Code (SMC 22.800 – 22.808)
- Stormwater Code Manual/ Directors Rules
- Right-of-way Improvement Manual



Stormwater Code Revision Project

- Drainage Control Code
 - Require Green Stormwater Infrastructure to the MEF
- Stormwater Code Manual/
Directors Rules
 - Infiltration
 - GSI design guidance and minimum requirements
 - GSI modeling methodology
 - Presized tables
 - O&M needs





Stormwater Manuals

www.seattle.gov/dpd/Planning/Stormwater_Grading_and_Drainage_Code_Revisions/

- Compost Amended Soil
- Trees
- Bioretention
- Permeable Pavement
- Green Roofs
- Cisterns
- Downspout Dispersion
- Sheet Flow Dispersion

Appendix D

Volume 3 — Flow Control and Water Quality Treatment
Technical Requirements Manual

Appendix D - Facility Operations and Maintenance Requirements

This appendix outlines inspection, maintenance, and record keeping requirements for stormwater management facilities in the City of Seattle. In addition, this appendix includes basic information about the common types of drainage systems used to detain and treat urban runoff, how they function, and how well they perform in removing stormwater pollutants. The types of drainage systems covered in this appendix include:

- Catch basins, maintenance holes, and storm drain inlets
- Vaults, tanks, and pipes
- Oil/water separators
- Media filters
- Biofilters (swales, wet swales, and filter strips)
- Infiltration trenches and basins
- Ponds and constructed wetlands
- Bioretention (swales and planters)
- Pervious pavement
- Vegetated roofs
- Cisterns
- Compost amended soil.

The appendix is designed to serve as both a summary of maintenance requirements as well as an inspection checklist for facility owners. The tables presented below describe each type of drainage system and list the inspection and maintenance requirements for each system. The inspection and maintenance requirements include information about what features to inspect at each facility, when and how often these systems should be inspected, and how to identify specific defects that warrant corrective action. Corrective actions are described that should be taken to maintain system performance.

In addition, the tables contain checklists to assist owners of drainage systems in conducting inspections and to aid in inspection documentation. Recordkeeping is an important and often required component of any maintenance program. It is necessary to ensure that inspections and maintenance operations are completed as scheduled and also to track the level of maintenance required at individual facilities and structures.



Stormwater Code Revision Project



- Stormwater Code—
Implementation Plan with
respect to GSI
 - Review/inspector
checklist
 - Guidelines for interpreting
MEF
 - O&M inspector checklists
 - City staff training



Drainage Code Changes = more GSI on private lots



Northgate Mall, Seattle

Drainage Code Changes = more GSI in Right-of-Way



Right-of-Way Improvement Manual

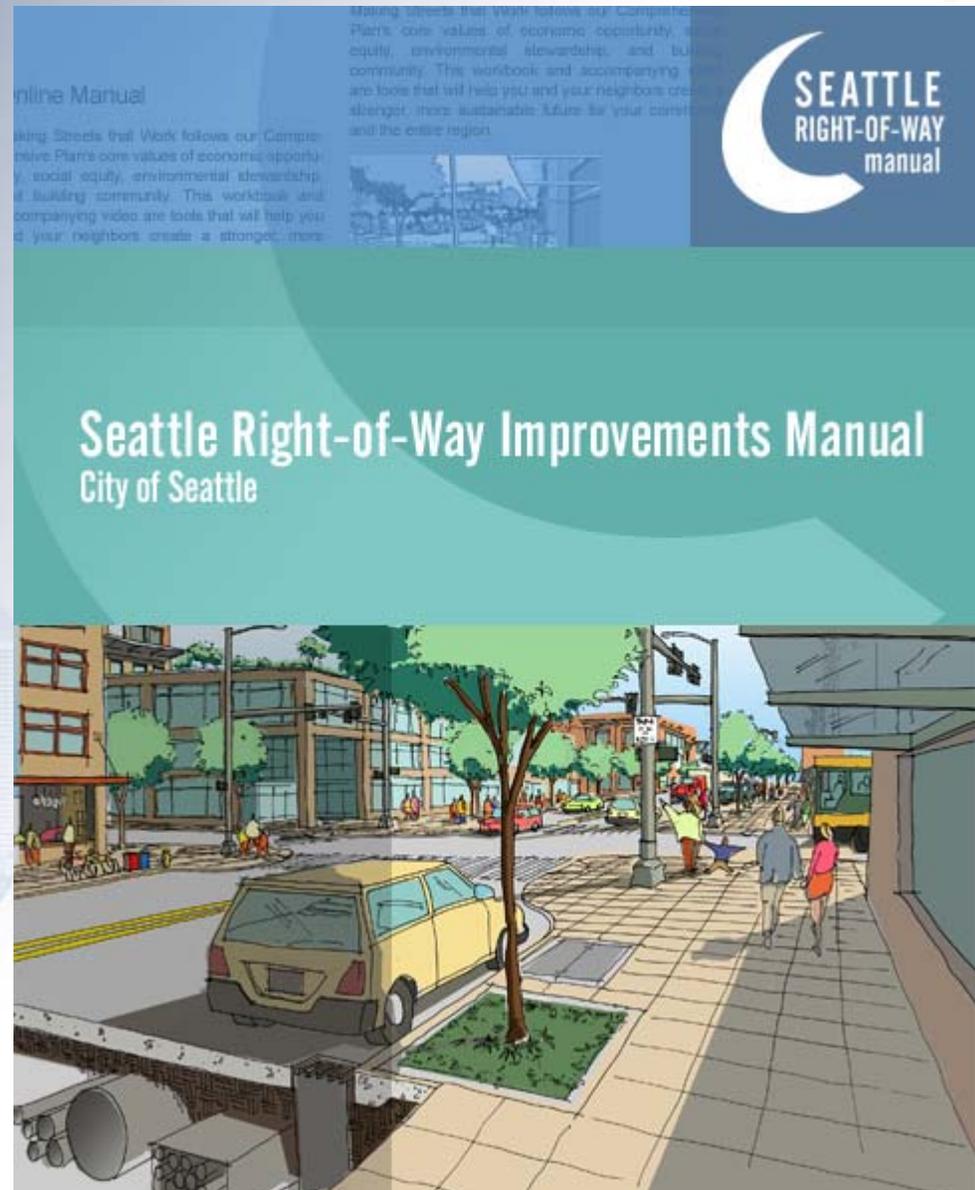
Seattle Public Utilities



Chapt 6.4

- Bioretention
 - Details
 - Bioretention soil specification
- Permeable Pavement
 - Details
 - Approved Paver List
 - Perm concrete specification

Will Significantly help permitting for projects using right of way to achieve Green Area Factor



ROWIM details – Full Street design Concepts

Pinehurst Green Grid
Dec 03, 2007



Porous Pavement – NOT ROADS



Lowering Barriers for retrofit projects

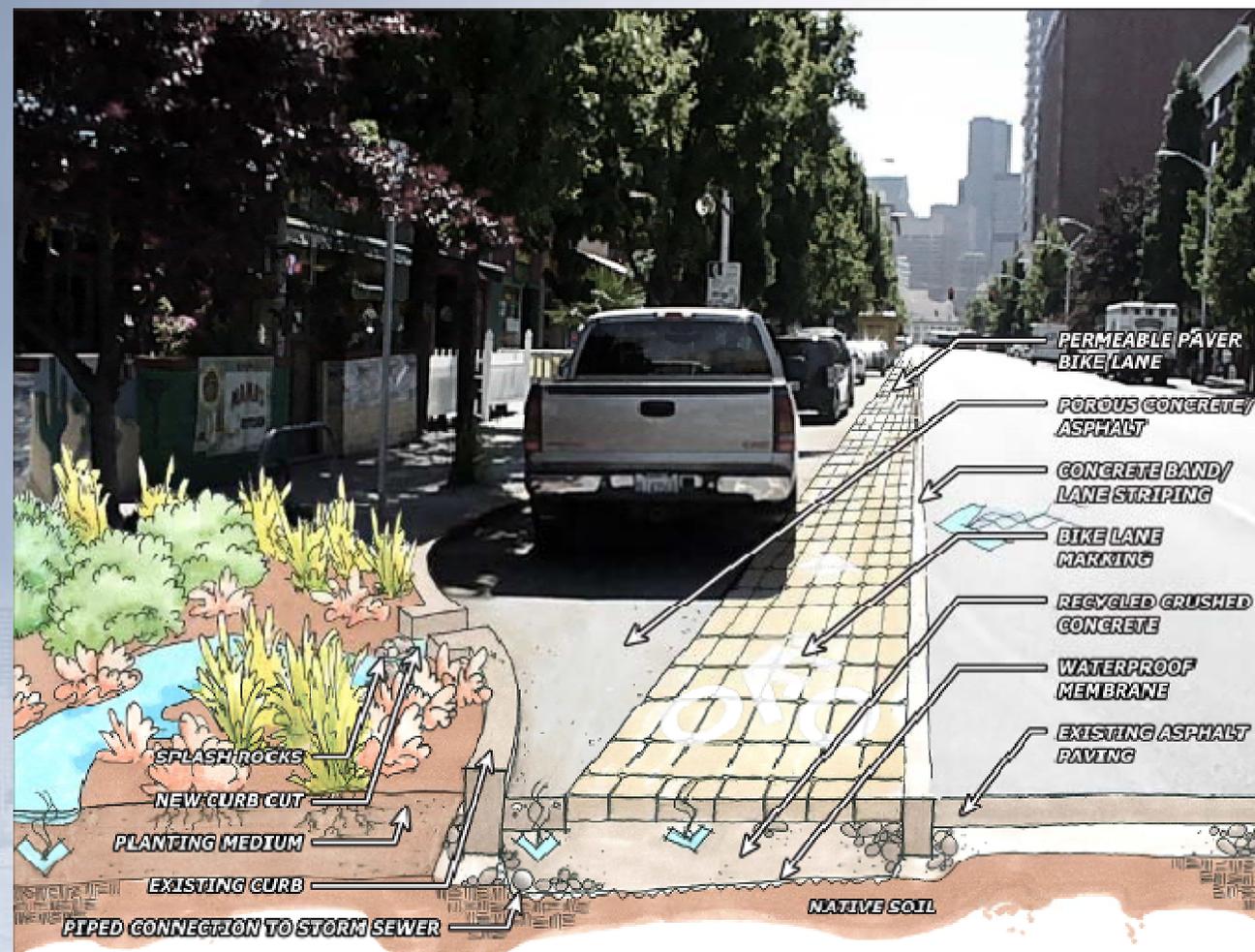


Bioretention Retrofit Opportunities

2ND AND BELL ST
GREEN STREET AND
BIKE LANE



Existing condition



Note:

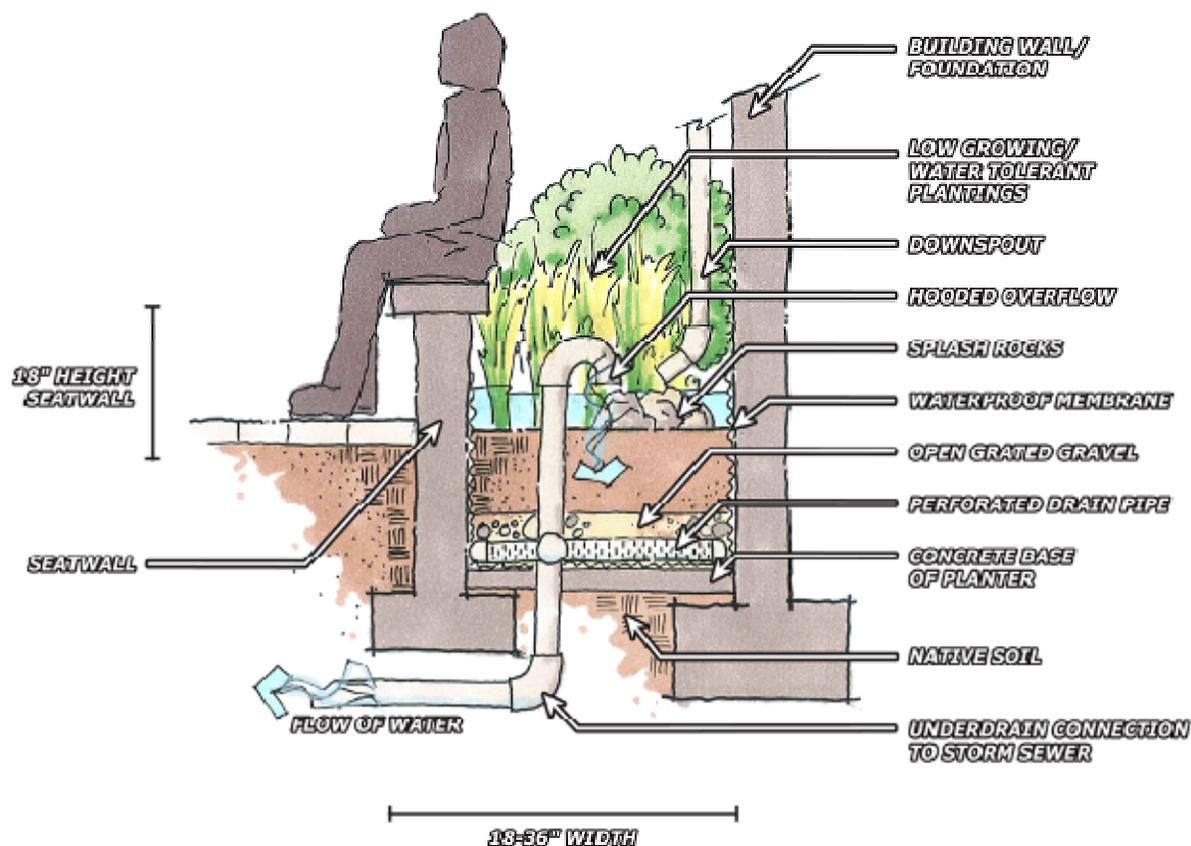
- Porous concrete/asphalt and permeable paver materials may be used exclusively, separately, or in tandem
- Use in tandem provides for maximum storage in storm events



BENAROYA HALL ROOFWATER PLANTER BOXES



Existing condition



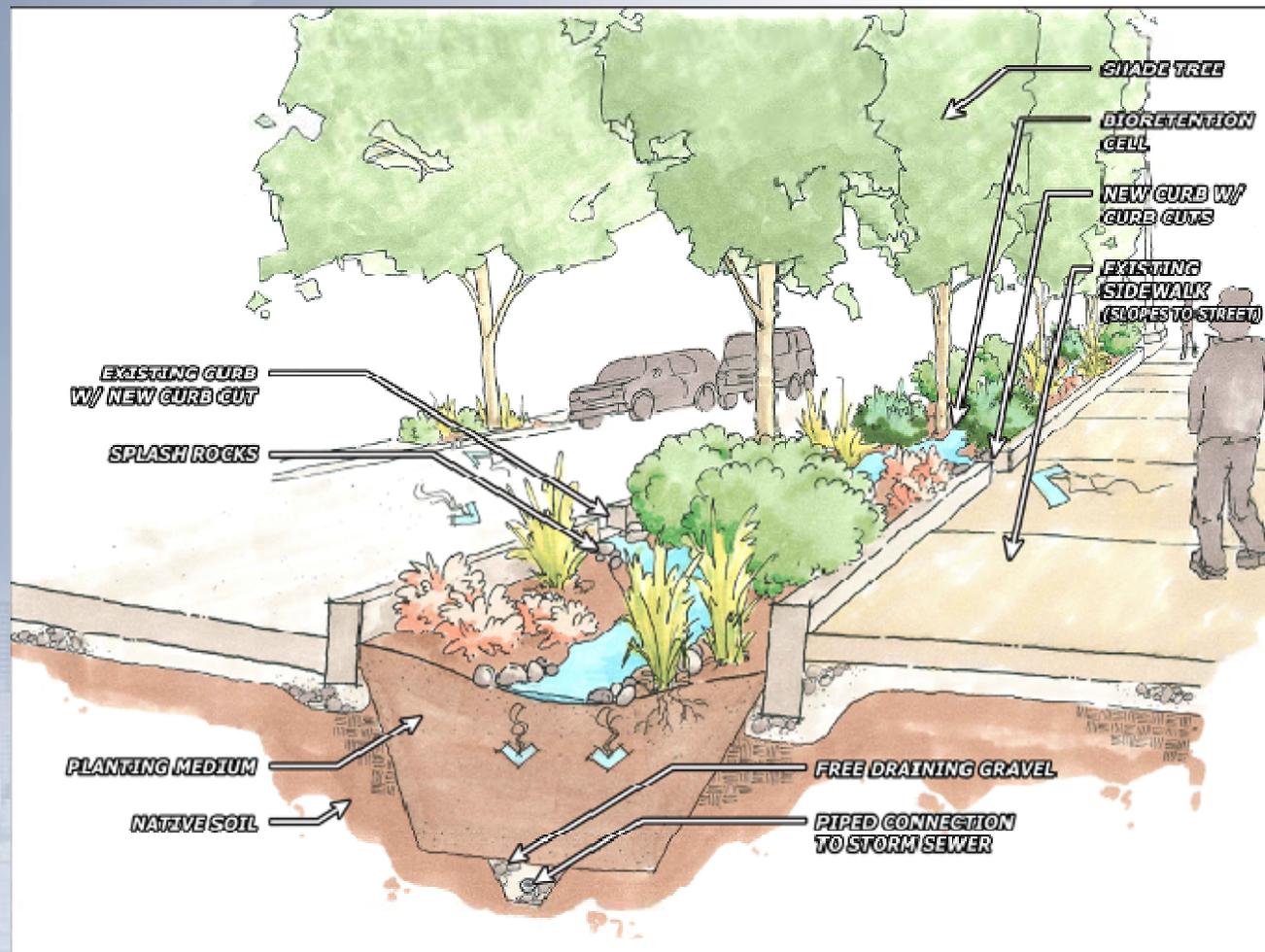
Note:

- Planters can be used as an alternative to green roof or in combination

SEATTLE MUNICIPAL TOWER
GREEN STREET



Existing conditions



Note:

- Bioretention cell planting will require minimal irrigation beyond first year



Lowering Barriers for retrofit projects

- GSI project managers manual – clarification of tools for evaluation of GSI
 - Overview of tools in the GSI toolbox
 - Consistently refer to SW Manual for the how tos
 - Provide unit Cost per area mitigated
 - GIS evaluation parameters for project basin scale analysis of GSI alternative
- Drainage and Wastewater partnership Program



Photos from SvR

Questions?



www.seattle.gov/util/naturalsystems