Seattle Design Commission
March 17, 2011
CAPITOL HILL WATER QUALITY PROJECT (SWALE ON YALE)
Meeting Agenda

1. Project Overview
2. Schedule
3. Design Goals
4. Design Context
5. Design Elements
1. Project Overview - Drainage Basin

- Combined area
- Separated area
- Separated area draining to Minor Ave outfall
Cascade Neighborhood

Cascade Park

REI
Context Aerial

Block 10

Block 11
Public-Private Partnership

- The project is only possible with support from the adjacent property owner:
- Voluntary 1-ft building set back provides extra room in the right-of-way
- Shared construction costs
- Shared maintenance
- Shared vision of sustainability
- Shared coordination and team work
Water Quality Improvements

BIOFILTRATION CHANNEL

- Treat portion of storm water draining from 435 acres of Capitol Hill
- Create 4 interconnected swales in conjunction with future developments
- Clean water flow to Lake Union
## 2. Project Schedule

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<tbody>
<tr>
<td>1. &amp; 4. Conveyance</td>
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<td>Design</td>
<td>Ad</td>
<td>Build</td>
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<tr>
<td>2. Northern Swales</td>
<td></td>
<td></td>
<td>Design</td>
<td>Developer Construction</td>
<td>Swale Construction</td>
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<td>3. North Block Repaving</td>
<td>Design</td>
<td></td>
<td>Ad</td>
<td>Roadway</td>
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<tr>
<td>5. Southern Swales*</td>
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<td></td>
<td>Design</td>
<td>Developer Construction</td>
<td>Swale Construction</td>
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<tr>
<td>6. South Block Repaving*</td>
<td>Design</td>
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<td></td>
<td>Ad</td>
<td>Road</td>
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<tr>
<td>Plant Establishment Monitoring</td>
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<td>Plant Establishment and Monitoring</td>
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*Timing of South Block work depends on market conditions.*

**Notes:**
- SPU Lead
- Developer Lead
3. Design Goals

- Create a Functioning Sustainable
  
  “Water Cleansing Machine”

- Provide safety for all users
- Provide efficient crossing and access to site and street
- Provide pedestrian-scale friendly aesthetic treatments
- Create a cohesive design that fits the street realm and integrates with the development
- Design to be easily maintainable
4. Design Context - Neighborhood Street Realm
Pedestrian Realm
Parking & Travel Lanes
Block 10 Development

Supply Laundry Building

New Mixed Use

New Mixed Use

New Mixed Use

Swale

Swale

YALE AVENUE N

REPUBLICAN ST

HARRISON ST

PONTIUS AVENUE N
Street Realm Section

16.5’ wide of swale

SWALE DESIGN PARAMETERS:

• Varying width up to 16.5’
• <2’ vertical wall on west edge of swale
• 1’ rise and 1’ run stair step on east edge of swale
Water Cleansing Machine

**KEY DESIGN ELEMENTS**

- Swale replaces on-street parking lane
- Swale 10.5' to 16.5' wide, 14' to 23' deep
- 26' wide driving/parking roadway
- Minimum 6' sidewalks
- Mid-block (≈17' wide) pedestrian crossing
5. Design Elements

- Swale design to have elegant, understandable expression
- Promote a more quiet design expression because of the “Design Expression” of street realm, including new and existing development
- Less is more – Minimalist Design
Swale Section

- Plants ~24" height in open swale area
- Slope to drain
- Curb

Dimensions:
- 6'-0'
- 8'
- 10' Yale (17' Pontius)

Consistently "n" value sheet flow / don't create erosion spots

Yale Avenue N (Northview)
Tooth to the Edges Exploration
Edge Treatments
Edge Treatments
Edge Treatments
Edge Treatments
Seating
Seating
Pedestrian Crossing
Pedestrian Crossing

- cantilever seating
- 42" tall railing wraps around corner and end of block
- transition panel (to edge of curb & gutter)
- curb & gutter
- slope to drain
- 6'-0" sidewalk
- 8" swale
- retaining wall
- Yale Avenue N (Northview)
Pedestrian Crossing
Pedestrian Crossing
# Planting

## Water Cleansing Function

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<tbody>
<tr>
<td><strong>Typ. Height</strong></td>
<td>8'-12'</td>
<td>10'-12'</td>
<td>12'-24'</td>
<td>12'-24'</td>
<td>18'-24'</td>
</tr>
<tr>
<td><strong>Typ. Spread</strong></td>
<td>12'-16'</td>
<td>10'-12'</td>
<td>24'-36'</td>
<td>12'-24'</td>
<td>24'-30'</td>
</tr>
<tr>
<td><strong>Sun/Shade Requirements</strong></td>
<td>Part shade-shade</td>
<td>Full sun-full shade</td>
<td>Part shade-shade</td>
<td>Full sun-part shade</td>
<td>Sun-part shade</td>
</tr>
<tr>
<td><strong>Soil Moisture Requirements</strong></td>
<td>Regular water</td>
<td>Regular water in full sun, drought tolerant once established</td>
<td>Regular water</td>
<td>Tolerates shallow water to dry shade</td>
<td>Constant moisture, suitable for bogs</td>
</tr>
<tr>
<td><strong>Foliage and Special Characteristics</strong></td>
<td>Silver/blue, evergreen foliage</td>
<td>Evergreen, narrow leaves, long-lived</td>
<td>Striking, evergreen foliage</td>
<td>Evergreen, adaptable and vigorous</td>
<td>Showy seed heads, stems turn brown with frost, fine texture</td>
</tr>
</tbody>
</table>

**SHORT**

**TALL**
Planting Layout Design

“Movement Concept”

“Tapestry Concept”
Planting Layout Design

Legend:
- Carex spicata / Seafoam sedge
- Alkanna serpyllifolia / Shining yellow
- Scorpius onos / Oldman's bulrush
- Carex echinata / Redstem sedge
- Iris douglasiana / Pacific coast iris

Monoculture

“Linear” Concept

“Curvy” Concept
Planting Layout Design
Planting Layout Design
Planting Layout Design

YALE AVENUE N
## Water Cleansing Function

**ZONE 1 - HIGH INUNDATION**

Area of periodic or frequent standing or flowing water; Tolerate seasonally dry periods of summer in Pacific NW; Applicable in zones 2 & 3.

<table>
<thead>
<tr>
<th>Shrubs:</th>
<th>18&quot; H</th>
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<tbody>
<tr>
<td>Cornus sericea 'Kelsey' / Dwarf dogwood</td>
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<tr>
<td>Cornus stolonifera / Redtwig dogwood</td>
<td></td>
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<tr>
<td>Myrica gale / Sweetgale</td>
<td>5'W x 5'H</td>
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<tr>
<td><strong>Emergents:</strong></td>
<td></td>
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<tr>
<td>Alopecurus aequalis / Shortawn foxtail</td>
<td>3' H</td>
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<tr>
<td>Carex otrvpta / Slough sedge</td>
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<tr>
<td>Carex stipata / Sawbreak sedge</td>
<td></td>
</tr>
<tr>
<td>Juncus effusus / Soft Rush</td>
<td>2'-3' H</td>
</tr>
<tr>
<td>Scirpus acutus / Hardstem bulrush</td>
<td>4'-8' H</td>
</tr>
<tr>
<td>Scirpus microcarpus / Small-fruited bulrush</td>
<td>2'-4' H</td>
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</tbody>
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**ZONE 2 - MID INUNDATION**

Periodic moist or saturated during larger storms; Applicable in zone 3.

<table>
<thead>
<tr>
<th>Shrubs:</th>
<th>2'-6' H</th>
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<tbody>
<tr>
<td>Symphoricarpos mollis / Creeping snowberry</td>
<td></td>
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<tr>
<td><strong>Herbaceous:</strong></td>
<td></td>
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<tr>
<td>Iris douglasiana / Pacific coast iris</td>
<td>1'-2' H</td>
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<tr>
<td>Tellima grandiflora / Fringedcup</td>
<td>1'-3' H</td>
</tr>
<tr>
<td>Tolmiea menziesii / Youth-on-age</td>
<td>1'-2' H</td>
</tr>
<tr>
<td>Carex elata 'Aurea' / Bowie's golden sedge</td>
<td>1'-3' H</td>
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<tr>
<td>Salix purpurea 'Nana' / Dwarf artic willow6'-8' H</td>
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**ZONE 3 - LOW INUNDATION**

Dryer soils, infrequently subject to inundation or saturation.

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<thead>
<tr>
<th>Shrubs:</th>
<th>2'-6' H</th>
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<tbody>
<tr>
<td>Symphoricarpos albus / Snowberry</td>
<td></td>
</tr>
<tr>
<td>Physocarpus opulifolius 'Summer Wine' / Ninebark</td>
<td>5'-6' H</td>
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<tr>
<td>Potentilla fruticosa 'Tangerine' / Shrubby cinquefoil</td>
<td>to 4' H</td>
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**Perennials & Ornamental Grasses:**

| Bromus carinatus / Native California brome | 3'-5' H |
| Carex comans 'Frosty curls' / New Zealand hair sedge | 1'-2' H |
| Festuca idahoensis / Idaho fescue | to 1' H |
| Helictotrichon sempervirens / Blue oat grass | 1'-1.5' H |
| Lupines sp. / Lupines | 3'-5' H |
Lighting
Interpretive Signage
Public Art

- Art
- Tree-Like Expressions
What the Public sees!
A Water Cleansing Machine
That Fits the Street Realm in the
Cascade Neighborhood
Block 10 Pontius
Block 10 Pontius