PRESENTATION OVERVIEW
• Study objectives
• LID retrofit identification
• Prioritization
• Conceptual design

Study Objectives
• Improve water quality
• Reduce local flooding
• Improve safety and mobility
• Enhance neighborhood aesthetics

Brookwood Lane is Kitsap County’s first “green street.”

Silverdale YMCA’s pervious concrete parking lot.
NORTH KITSAP STUDY AREAS
PROJECT SCHEDULE

Summer/Fall 2012
Investigate
Select potential retrofit sites
- Community Meeting Series #1

Fall/Winter 2012
Identify
Prioritize and evaluate retrofit sites
- Community Meeting Series #2

Winter/Spring 2013
Refine
Develop conceptual designs and costs for identified retrofit sites
- Community Meeting Series #3
Project Identification and Prioritization

- Identify Opportunity Areas:
  - Review relevant data, historical complaints
  - Evaluate opportunities and constraints

- Identify Feasible Sites:
  - Field evaluation
  - Select feasible sites
  - 76 sites

- Assess & Rank Feasible Sites:
  - Evaluate feasibility and benefit criteria
  - Rank projects
  - Select top projects for further analysis
  - 22 projects

- Develop Concepts & Prioritize Projects:
  - Additional Field evaluation
  - Prepare planning-level designs and estimates
  - Prioritize projects
  - Select highest priority projects

- Preliminary Engineering:
  - Refine conceptual designs and estimates
  - Prepare preliminary engineering reports

We are here
RANKING FEASIBLE SITES

- Infiltration potential
- Impervious surface
- Water quality benefit
- Slope
- Risk to surrounding environment
- Available area
- Utility coordination
RANKING FEASIBLE SITES

Shallow Infiltration

Deep Infiltration

Legend
- Study Area Boundary
- ROW
- Arterial
- Water Body

Shallow Infiltration Feasibility
- Good
- Fair
- Underdrain
- Not Recommended

Legend
- Study Area Boundary
- Deep Infiltration Potential
- ROW
- HIERARCHY
- Arterial
- Water Body
- Wetlands
- Roads

Good
Low
RANKING FEASIBLE SITES

WELLS & GEOHAZARDS

Legend
- Study Area Boundary
- ROW
- Arterial
- Water body
- Geohazard
  - Areas of Concern
  - High Hazard Areas
  - Wells

Wells & Geohazards

- Areas of Concern
- High Hazard Areas
- Wells
RANKING FEASIBLE SITES

Drainage Subbasins

Legend
- Multiple CRMs
- Single CRM Subbasin
- Study Area Boundary
- LiDAR Generated Flowpath
- 10-foot Contour
- Water body
RANKING FEASIBLE SITES
POTENTIAL RETROFIT SITES
Suquamish Study Area
POTENTIAL SITES
Keyport Study Area
POTENTIAL SITES
Keyport Study Area
## PROJECT PRIORITIZATION

### Scoring Criteria

<table>
<thead>
<tr>
<th>Water Quality</th>
<th>0</th>
<th>No measurable impact on WQ</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Relatively low impact on WQ</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Relatively moderate impact on WQ</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Relatively high impact on WQ</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Drainage &amp; Local Flooding</th>
<th>0</th>
<th>No drainage improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Some drainage improvement</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Improves local drainage and reduces local flooding</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Addresses specific drainage or local flooding issues based on record of historical complaints</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Constructability</th>
<th>0</th>
<th>Potentially significant impacts to residents</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Some utility conflicts may increase construction time/costs</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Construction not expected to be complicated by utilities</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>County crews can construct the project in 2 weeks or less</td>
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</table>

<table>
<thead>
<tr>
<th>Operation and Maintenance</th>
<th>0</th>
<th>Long-term operation and maintenance of project not feasible or cost effective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Outside of County-owned right-of-way and will require external O&amp;M</td>
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<tr>
<td></td>
<td>2</td>
<td>May need to purchase new equipment, train staff, and/or allocate more budget</td>
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<tr>
<td></td>
<td>3</td>
<td>County has necessary equipment, experience, and budget to maintain the proposed BMP types</td>
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</table>

<table>
<thead>
<tr>
<th>Ease of Funding</th>
<th>0</th>
<th>Expected cost of project exceeds value and/or funding is not available</th>
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<tbody>
<tr>
<td></td>
<td>1</td>
<td>Project funding depends on collaboration with WSDOT, tribes, or other entities</td>
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<tr>
<td></td>
<td>2</td>
<td>Project not expected to be eligible for grant funding</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Project expected to be eligible and compete successfully for grant funding</td>
</tr>
</tbody>
</table>
# INITIAL PROJECT PRIORITIZATION

**Example - Suquamish Study Area**

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site/Project Name</th>
<th>Water Quality</th>
<th>Drainage and Local Flooding</th>
<th>Constructability</th>
<th>Operations and Maintenance</th>
<th>Ease of Funding</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>0-10, 11, 13-15, 20</td>
<td>Brockton Grid Side Streets</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>15</td>
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<tr>
<td>5</td>
<td>Brockton Ave NE #1</td>
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<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>14</td>
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<tr>
<td>31 &amp; 32</td>
<td>NE Center Side Streets - 4th Ave NE and 3rd Ave NE</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>13</td>
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<tr>
<td>43</td>
<td>Upper Division Ave</td>
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<td>3</td>
<td>3</td>
<td>3</td>
<td>13</td>
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<tr>
<td>40</td>
<td>Augusta Ave NE - New</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>11</td>
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<tr>
<td>28</td>
<td>Suquamish United Church of Christ and Kitsap Transit Park and Ride Permeable Pavement</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>10</td>
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<tr>
<td>78</td>
<td>Suquamish United Church of Christ and Division St, Bioretention</td>
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<td>3</td>
<td>2</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>NE Pine St #1 and Urban Ave NE</td>
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<td>2</td>
<td>2</td>
<td>2</td>
<td>9</td>
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<tr>
<td>17</td>
<td>NE Bell St</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>40</td>
<td>Augusta Ave NE - Old/Downtown</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>9</td>
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<tr>
<td>8</td>
<td>NE Center St #9a - Constructed Wetland</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>
INITIAL CONCEPTUAL DESIGN
Brockton Ave NE, Suquamish, WA

POTENTIAL LID STRATEGIES:
1. Bioretention Swale
2. Undrained
3. Curb Cut
4. Re-grade to drain to bioretention swale
5. Permeable pavement walkway/sidewalk
6. Asphalt curb/hump
INITIAL CONCEPTUAL DESIGN
Indianola Rd NE, Indianola, WA

POTENTIAL LID STRATEGIES:
1. Enhanced Tree Pit
2. Curb Cut
3. Permeable Pavement
4. Permeable Pavement Delineator
INITIAL CONCEPTUAL DESIGN
Washington Ave NE, Keyport, WA

POTENTIAL LID STRATEGIES:
1. Curb Bulb-out Bioretention w/ ADA Curb Ramps
2. Curb Cut
3. Permeable Pavement Parking
4. Permeable Pavement Walkway
CONTACT US

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