TECHNICAL MEMORANDUM

Puget Sound Stormwater BMP Cost Database

Prepared for
Washington State Department of Ecology
Environmental Assessment Program
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Note:
Some pages in this document have been purposely skipped or blank pages inserted so that this document will copy correctly when duplexed.
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Introduction and Purpose

As part of the Phase 3 study of toxic chemicals in surface runoff to Puget Sound, Herrera Environmental Consultants (Herrera) gathered costs for best management practices (BMPs) installed in the Puget Sound region to be integrated into the System for Urban Stormwater Treatment and Analysis INtegration (SUSTAIN) model. SUSTAIN was developed by the U.S. Environmental Protection Agency (EPA) as a decision support system to facilitate the selection and placement of BMPs and Low Impact Development (LID) techniques at strategic locations in urban watersheds. The BMP cost database is one of the key components of the SUSTAIN framework; however, it was developed using information obtained from national sources. In order to make this model more useful for local projects, BMP cost information for the following BMPs was collected from projects constructed in Puget Sound:

- Bioretention
- Cistern
- Constructed Wetland
- Grassed Swale
- Green Roof
- Infiltration Trench
- Porous Pavement
- Rain Barrel
- Vegetated Filter Strip
- Wet Pond

The purpose of this memorandum is to summarize the initial BMP cost compilation. While not intended as a comprehensive assessment, this initial compilation will be used to evaluate BMP options for a commercial basin in the City of Federal Way (Herrera 2012). The cost database is intended to be updated on a regular basis and will be available on the project website developed for the Phase 3 study: http://www.ecy.wa.gov/programs/eap/toxics/sustainmodeling.html.

The process for collecting this cost information included the following:

- Early August 2011 – Cost request templates (Microsoft Excel spreadsheets) were developed for each BMP listed above and posted on a project-specific webpage (http://www.herrerainc.com/bmpcostsforpugetsound)
- August 16, 2011 – Washington State Department of Ecology (Ecology) regional permit coordinators sent out a request to their permittees
- August-October 2011 – Internet research on cistern and rain barrel costs and existing cost documentation for stormwater BMP projects in the Puget Sound region
- August-October 2011 – Phone calls and e-mail requests to vendors with porous pavement, cistern, and green roof products
This memorandum summarizes the project information, unit costs, and total BMP costs that were gathered for each BMP type. The costs provided in this memorandum are the best estimate of cost per square foot (or cubic foot) based on the available information and may include varying levels of detail depending on the information available (bid tabs, construction drawings, etc.). Some of the cost estimates may include mobilization, erosion and sediment control, traffic control, plantings on other portions of the site, and other project components if the cost provided was the total for the entire project and could not be broken out based on specific stormwater BMPs. If bid tabs and quantities were available, the cost per square foot was calculated based on the line items that were directly related to the stormwater facility. These cost estimates typically did not incorporate mobilization, erosion and sediment control, and traffic control, but may have included surrounding landscaping in addition to plantings incorporated into BMP design. Cost estimates were converted to 2012 cost estimates using the Engineering News-Record construction cost index (CCI).

The master cost database is included as Attachment 1. Individual cost request spreadsheets received by or filled out from information received from cities, counties, ports, WSDOT, vendors, or private owners are included as Attachment 2.

**Bioretention**

Bioretention refers to engineered facilities (i.e., bioretention cells, bioretention swales, rain gardens) that store and treat stormwater by passing it through a specified soil profile.

**Projects**

Table 1 summarizes information related to bioretention facilities. Cost information for 21 bioretention facilities from 7 cities, 3 counties, and 1 port facility was gathered for the Puget Sound BMP cost database.

**Unit Costs**

Table 2 summarizes the minimum, average, and maximum costs for each bioretention component.

Unit costs currently in the SUSTAIN BMP cost database that were not provided during the Puget Sound BMP cost database data gathering effort include:

- Backfilling (CF)
- Grading/finishing (SF)
Table 1. Bioretention project information.

<table>
<thead>
<tr>
<th>City/County/Vendor</th>
<th>Project Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Auburn</td>
<td>West Valley Highway Improvements Project</td>
<td>Bid tabs and takeoffs</td>
</tr>
<tr>
<td>City of Bellingham</td>
<td>Bloedel Donovan Park</td>
<td>Reining in the Rain report</td>
</tr>
<tr>
<td>City of Bellingham</td>
<td>Bellingham City Hall</td>
<td>Reining in the Rain report</td>
</tr>
<tr>
<td>City of Bellingham</td>
<td>Flynn Street Water Quality</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>City of Issaquah</td>
<td>Central Park Lot</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>City of Poulsbo</td>
<td>Caldart Avenue Improvements</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>City of Puyallup</td>
<td>Puyallup Rain Garden Program</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>City of Redmond</td>
<td>185th Avenue NE Extension</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>City of Redmond</td>
<td>SR 202 and NE 124th Street Intersection</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>Pierce County</td>
<td>Sprinker Parking Lot LID</td>
<td>Bid tabs and drawings</td>
</tr>
<tr>
<td>Port of Anacortes</td>
<td>Anthony's Parking Lot</td>
<td>E-mail from Port</td>
</tr>
<tr>
<td>Port of Anacortes</td>
<td>O Avenue</td>
<td>E-mail from Port</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>Ballard Rain Gardens</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>Broadview Green Grid</td>
<td>City website</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>High Point</td>
<td>Stage Gate-2 for Venema Natural Drainage System report (O&amp;M cost only)</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>Pinehurst Green Grid</td>
<td>Final cost estimate from City</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>Rainwise – Private Rain Gardens</td>
<td>Life-cycle cost of Green Stormwater Infrastructure for the CSO LTCP report</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>Rainwise – Roadside Rain Gardens</td>
<td>Life-cycle cost of Green Stormwater Infrastructure for the CSO LTCP report</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>SEA Streets</td>
<td>City website</td>
</tr>
<tr>
<td>Snohomish County</td>
<td>Silver Creek Basin LID Retrofits</td>
<td>Engineer’s estimate</td>
</tr>
<tr>
<td>Thurston County</td>
<td>Evergreen Terrace – Phase III</td>
<td>Bid tabs</td>
</tr>
</tbody>
</table>

Total Bioretention Cost

Table 3 summarizes the minimum, average, and maximum construction and operation and maintenance (O&M) costs for bioretention as a function of surface area (cost per square foot). Construction costs were calculated based on the unit cost information presented in Table 2 (when bid tabs and quantities were available) and jurisdictional “per square foot” costs (when provided). Note that these unit area facility costs do not necessarily reflect all associated construction costs because costs such as mobilization, temporary erosion and sediment control, and traffic control, were not included in the cost database. Design costs are presented in Table 3 as a percentage of the corresponding construction cost. Design costs were calculated based on jurisdiction submittals and projects where both design and construction costs were provided.
Table 2. Bioretention unit cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check dam</td>
<td>Per unit</td>
<td>1</td>
<td>$155.20</td>
<td>$155.20</td>
<td>$155.20</td>
<td>No</td>
</tr>
<tr>
<td>Compost</td>
<td>CF</td>
<td>4</td>
<td>$0.66</td>
<td>$1.11</td>
<td>$1.68</td>
<td>No</td>
</tr>
<tr>
<td>Emergents</td>
<td>Per unit</td>
<td>1</td>
<td>$2.69</td>
<td>$2.69</td>
<td>$2.69</td>
<td>No</td>
</tr>
<tr>
<td>Excavation</td>
<td>CF</td>
<td>7</td>
<td>$0.20</td>
<td>$0.79</td>
<td>$1.58</td>
<td>Yes</td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>SF</td>
<td>5</td>
<td>$0.28</td>
<td>$0.74</td>
<td>$1.15</td>
<td>Yes</td>
</tr>
<tr>
<td>Grass</td>
<td>SF</td>
<td>5</td>
<td>$0.02</td>
<td>$0.53</td>
<td>$1.26</td>
<td>Yes</td>
</tr>
<tr>
<td>Gravel</td>
<td>CF</td>
<td>8</td>
<td>$0.56</td>
<td>$1.78</td>
<td>$3.05</td>
<td>Yes</td>
</tr>
<tr>
<td>Ground Cover</td>
<td>Per unit</td>
<td>2</td>
<td>$3.29</td>
<td>$5.49</td>
<td>$7.69</td>
<td>No</td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>Per unit</td>
<td>2</td>
<td>$1,390</td>
<td>$4,575</td>
<td>$7,760</td>
<td>Not as an option for this BMP type</td>
</tr>
<tr>
<td>Mulch</td>
<td>CF</td>
<td>8</td>
<td>$0.68</td>
<td>$1.28</td>
<td>$1.98</td>
<td>Yes</td>
</tr>
<tr>
<td>Observation Well</td>
<td>Per unit</td>
<td>1</td>
<td>$213.86</td>
<td>$213.86</td>
<td>$213.86</td>
<td>No</td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>Per unit</td>
<td>3</td>
<td>$695.04</td>
<td>$5,297</td>
<td>$12,416</td>
<td>Not as an option for this BMP type</td>
</tr>
<tr>
<td>Perennials</td>
<td>Per unit</td>
<td>5</td>
<td>$1.66</td>
<td>$5.60</td>
<td>$10.09</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>SF</td>
<td>1</td>
<td>$3.94</td>
<td>$3.94</td>
<td>$3.94</td>
<td>No</td>
</tr>
<tr>
<td>Small Trees</td>
<td>Per unit</td>
<td>8</td>
<td>$3.05</td>
<td>$60.04</td>
<td>$222.46</td>
<td>Yes</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>CF</td>
<td>9</td>
<td>$0.77</td>
<td>$1.47</td>
<td>$2.17</td>
<td>Yes</td>
</tr>
<tr>
<td>Streambed Cobbles</td>
<td>CF</td>
<td>1</td>
<td>$7.92</td>
<td>$7.92</td>
<td>$7.92</td>
<td>No</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>Feet</td>
<td>3</td>
<td>$10.09</td>
<td>$24.75</td>
<td>$41.39</td>
<td>Yes</td>
</tr>
<tr>
<td>Woody Shrubs</td>
<td>Per unit</td>
<td>6</td>
<td>$6.57</td>
<td>$81.05</td>
<td>$435.67</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>SF</td>
<td>3</td>
<td>$2.20</td>
<td>$3.99</td>
<td>$5.77</td>
<td>No</td>
</tr>
</tbody>
</table>

n: number of facilities
CF: cubic feet
SF: square feet

Table 3. Bioretention project cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Cost/Percentage</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>SF</td>
<td>23</td>
<td>$4.28</td>
<td>$31.61</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>SF</td>
<td>7</td>
<td>$0.19</td>
<td>$1.27</td>
</tr>
<tr>
<td>Design *</td>
<td>%</td>
<td>5</td>
<td>12%</td>
<td>67%</td>
</tr>
</tbody>
</table>

* Design costs are presented as a percentage of construction costs. A percentage of costs were calculated for the bioretention facilities if bid tabs and quantities were available.

n: number of facilities
SF: square feet

Cistern

Cisterns are underground or aboveground tanks constructed of fiberglass, polyethylene, concrete, metal, or wood that are used for water storage and reuse.
Projects and Products

Table 4 summarizes information related to cisterns. Cost information for 14 cisterns from 1 city and 4 vendors was gathered for the Puget Sound BMP cost database.

Table 4. Cistern project and product information.

<table>
<thead>
<tr>
<th>City/Vendor</th>
<th>Project/Product Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquabarrel Rain Barrel</td>
<td>Complete Cistern</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Aquabarrel Rain Barrel</td>
<td>Fat Boy Water Wall</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Aquabarrel Rain Barrel</td>
<td>Rainwater Pillow</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Berg Vault</td>
<td>Aboveground Cisterns</td>
<td>Vendor e-mail request</td>
</tr>
<tr>
<td>Berg Vault</td>
<td>Belowground Cisterns</td>
<td>Vendor e-mail request</td>
</tr>
<tr>
<td>BH Tanks</td>
<td>Highline Colorbond Tank</td>
<td>Vendor e-mail request</td>
</tr>
<tr>
<td>BH Tanks</td>
<td>Highline Zincalum Tank</td>
<td>Vendor e-mail request</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Aquadra Modular Cisterns</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Contain Rainwater Harvesting Wall</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Plastic Cisterns</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Plastic Underground Cisterns</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Rainwater HOG Modular Cisterns</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Water Wall</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>Rainwise – Private Cisterns</td>
<td>Life-cycle cost of Green Stormwater Infrastructure for the CSO LTCP report</td>
</tr>
</tbody>
</table>

Total Cistern Cost

Table 5 summarizes the minimum, average, and maximum costs for cisterns per unit and as a function of volume (cost per cubic foot). The City of Seattle cistern costs were provided as a function of the mitigated drainage area (cost per square foot). Additional costs may also need to be added for shipping and tax.

Table 5. Cistern cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>Per unit</td>
<td>27</td>
<td>$2.07</td>
<td>$12.98</td>
<td>$46.56</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>CF</td>
<td>27</td>
<td>$58.98</td>
<td>$4,360</td>
<td>$28,044</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>SF</td>
<td>1</td>
<td>$2.78</td>
<td>$2.78</td>
<td>$2.78</td>
<td>No</td>
</tr>
<tr>
<td>Screen</td>
<td>Per unit</td>
<td>1</td>
<td>$19.66</td>
<td>$19.66</td>
<td>$19.66</td>
<td>No</td>
</tr>
</tbody>
</table>

n: number of products (Multiple costs [low, mid range, and high] were included for some cisterns)

CF: cubic feet
SF: square feet
**Construct Wetland**

A constructed wetland is a shallow man-made pond that is designed to treat stormwater through biological processes associated with emergent aquatic plants.

**Projects**

Table 6 summarizes information related to constructed wetland facilities. Cost information for four constructed wetland facilities from three cities was gathered for the Puget Sound BMP cost database.

<table>
<thead>
<tr>
<th>City</th>
<th>Project Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Arlington</td>
<td>Arlington Constructed Stormwater Wetland</td>
<td>E-mail from City</td>
</tr>
<tr>
<td>City of Bellingham</td>
<td>Brentwood Rock Plant Filter Retrofit</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>City of Bellingham</td>
<td>Eliza Road Improvements</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>City of Redmond</td>
<td>Bear Creek Park Water Quality Facility</td>
<td>Bid tabs and drawings</td>
</tr>
</tbody>
</table>

**Unit Costs**

Table 7 summarizes the minimum, average, and maximum costs for each constructed wetland component.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>CF</td>
<td>1</td>
<td>$0.77</td>
<td>$0.77</td>
<td>$0.77</td>
<td>Yes</td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>Per unit</td>
<td>1</td>
<td>$2,256</td>
<td>$2,256</td>
<td>$2,256</td>
<td>Yes</td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>Per unit</td>
<td>2</td>
<td>$5,586</td>
<td>$6,427</td>
<td>$7,269</td>
<td>Yes</td>
</tr>
<tr>
<td>Perennials</td>
<td>Per unit</td>
<td>1</td>
<td>$2.85</td>
<td>$2.85</td>
<td>$2.85</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>SF</td>
<td>2</td>
<td>$1.52</td>
<td>$1.68</td>
<td>$1.83</td>
<td></td>
</tr>
<tr>
<td>Seal (Clay Liner)</td>
<td>SF</td>
<td>1</td>
<td>$1.42</td>
<td>$1.42</td>
<td>$1.42</td>
<td>Not as an option for this BMP type</td>
</tr>
<tr>
<td>Small Trees</td>
<td>Per unit</td>
<td>3</td>
<td>$28.97</td>
<td>$121.75</td>
<td>$232.80</td>
<td>Not as an option for this BMP type</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>CF</td>
<td>1</td>
<td>$0.57</td>
<td>$0.57</td>
<td>$0.57</td>
<td>Yes</td>
</tr>
<tr>
<td>Woody Shrubs</td>
<td>Per unit</td>
<td>2</td>
<td>$9.31</td>
<td>$11.90</td>
<td>$14.49</td>
<td>Not as an option for this BMP type</td>
</tr>
</tbody>
</table>

n: number of facilities
CF: cubic feet
SF: square feet

Unit costs currently in the SUSTAIN BMP cost database that were not provided during the Puget Sound BMP cost database data gathering effort include:
- Backfilling (CF)
- Grading/finishing (SF)
- Mulch (CF) – not commonly used

**Total Constructed Wetland Cost**

Table 8 summarizes the minimum, average, and maximum construction costs for constructed wetlands as a function of surface area (cost per square foot). Construction costs were calculated based on the unit cost information presented in Table 7 (when bid tabs and quantities were available) and jurisdictional “per square foot” costs (when provided). Note that these unit area facility costs do not necessarily reflect all associated construction costs because costs such as mobilization, temporary erosion and sediment control, and traffic control, were not included in the cost database. Design costs are presented in Table 8 as a percentage of the corresponding construction cost. Design costs were calculated based on jurisdiction submittals and projects where both design and construction costs were provided. O&M costs were not provided by the cities submitting cost data on their constructed wetland facilities.

### Table 8. Constructed wetland project cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Cost/Percentage</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>Average</td>
</tr>
<tr>
<td>Constructed Wetland</td>
<td>SF</td>
<td>4</td>
<td>$2.10</td>
<td>$8.81</td>
</tr>
<tr>
<td>Design a</td>
<td>%</td>
<td>2</td>
<td>14%</td>
<td>23%</td>
</tr>
</tbody>
</table>

* Design costs are presented as a percentage of construction costs. A percentage of costs were calculated for the bioretention facilities if bid tabs and quantities were available.

n: number of facilities
SF: square feet

---

**Grassed Swale**

A grassed swale (e.g., vegetated swale, biofiltration swale) is a drainage conveyance designed to have a shallow flow depth (i.e., less than 1 foot) and is primarily lined with grass and other ground cover species.

**Projects**

Table 9 summarizes information related to grassed swale facilities. Cost information for three grassed swale facilities from one city and the Washington State Department of Transportation (WSDOT) was gathered for the Puget Sound BMP cost database.
Table 9. Grassed swale project information.

<table>
<thead>
<tr>
<th>City/Agency</th>
<th>Project Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Mount Vernon</td>
<td>Freeway Drive Improvements Phase II</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 518 Control Biofiltration Swale</td>
<td>Compost-amended biofiltration swale TER</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 518 Compost-Amended Biofiltration Swale</td>
<td>Compost-amended biofiltration swale TER</td>
</tr>
</tbody>
</table>

TER: Technical Evaluation Report

Unit Costs

Table 10 summarizes the minimum, average, and maximum costs for each grassed swale component.

Table 10. Grassed swale unit cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Cost</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>CF</td>
<td>1</td>
<td>$0.30</td>
<td>$0.30</td>
</tr>
<tr>
<td>Grass</td>
<td>SF</td>
<td>1</td>
<td>$0.87</td>
<td>$0.87</td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>Per unit</td>
<td>1</td>
<td>$2,287</td>
<td>$2,287</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>Feet</td>
<td>1</td>
<td>$30.73</td>
<td>$30.73</td>
</tr>
</tbody>
</table>

n: number of facilities
CF: cubic feet
SF: square feet

Unit costs currently in the SUSTAIN BMP cost database that were not provided during the Puget Sound BMP cost database data gathering effort include:

- Grading/finishing (SF)

Other unit costs that were not provided during this cost gathering effort and are currently not included in the SUSTAIN BMP cost database, but may be incorporated into grassed swale designs include:

- Gravel (CF) – used as a flow spreader at the inlet, in the swale for wide swales, bedding around underdrain pipes, and as energy dissipaters (where needed)

- Compost (CF) – tilled into native soil or used as a compost blanket in a compost-amended biofiltration swale

- Ground Cover (SF) – could be used in combination with grasses

- Inlet Structure (per unit) – used for facilities with piped inflow
Total Grassed Swale Cost

Table 11 summarizes the minimum, average, and maximum construction and O&M costs for grassed swales as a function of surface area (cost per square foot). The City of Mount Vernon design was designated as a grass-lined rain garden. The range in costs for the WSDOT design is for a standard biofiltration swale (on the low end) and a compost-amended biofiltration swale (on the high end). Construction costs were calculated based on the unit cost information presented in Table 10 (when bid tabs and quantities were available) and jurisdictional “per square foot” costs (when provided). Note that these unit area facility costs do not necessarily reflect all associated construction costs because costs such as mobilization, temporary erosion and sediment control, and traffic control, were not included in the cost database. Design costs are presented in Table 11 as a percentage of the corresponding construction cost. Design costs were calculated based on jurisdiction submittals and projects where both design and construction costs were provided.

**Table 11. Grassed swale project cost information.**

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Cost/Percentage</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass-lined Rain Garden</td>
<td>SF</td>
<td>1</td>
<td>Low 9.42</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average 9.42</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>High 9.42</td>
<td></td>
</tr>
<tr>
<td>Grassed Swale</td>
<td>SF</td>
<td>2</td>
<td>Low 4.30</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average 4.59</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>High 4.87</td>
<td></td>
</tr>
<tr>
<td>O&amp;M</td>
<td>SF</td>
<td>1</td>
<td>Low 0.49</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average 0.49</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>High 0.49</td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>%</td>
<td>1</td>
<td>Low 51%</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average 51%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>High 51%</td>
<td></td>
</tr>
</tbody>
</table>

* Design costs are presented as a percentage of construction costs. A percentage of costs were calculated for the bioretention facilities if bid tabs and quantities were available.

n: number of facilities
SF: square feet

Green Roof

A green roof (e.g., vegetated roof, eco-roof) can either be designed as an intensive roof with a deep soil profile (6 inches and deeper) planted with ground cover species, shrubs, and trees or an extensive roof with a shallow soil profile (1 to 5 inches) planted with ground cover species.

Projects

Table 12 summarizes information related to green roofs. Cost information for 11 green roofs and green roof components from 2 cities, 5 private, and 3 vendors was gathered for the Puget Sound BMP cost database.
### Table 12. Green roof project information.

<table>
<thead>
<tr>
<th>City/Private/Vendor</th>
<th>Product/Project Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Mukilteo</td>
<td>Mukilteo City Hall</td>
<td>E-mail from City</td>
</tr>
<tr>
<td>City of Seattle</td>
<td>Seattle Justice Center</td>
<td>Seattle Green Roof Inventory</td>
</tr>
<tr>
<td>Private</td>
<td>2,500 SF green roof in Seattle</td>
<td>Seattle Green Roof Inventory</td>
</tr>
<tr>
<td>Private</td>
<td>8,355 SF green roof in Seattle</td>
<td>Seattle Green Roof Inventory</td>
</tr>
<tr>
<td>Private</td>
<td>27,000+ SF green roof in Seattle</td>
<td>Seattle Green Roof Inventory</td>
</tr>
<tr>
<td>Private</td>
<td>Leppanen Green Roof</td>
<td>Bellingham Green Roof Case Studies website</td>
</tr>
<tr>
<td>Private</td>
<td>Lightcatcher Museum Green Roof</td>
<td>Bellingham Green Roof Case Studies website</td>
</tr>
<tr>
<td>Seattle Public Library</td>
<td>Ballard Library</td>
<td>Seattle Green Roof Inventory</td>
</tr>
<tr>
<td>Swanson Bark &amp; Wood Products</td>
<td>Roof-lite Media</td>
<td>Vendor e-mail request</td>
</tr>
<tr>
<td>The Garland Company</td>
<td>Extensive Green Roof</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>Weston Solutions, Inc.</td>
<td>GreenGrid® Intensive Green Roof System</td>
<td>Vendor e-mail request</td>
</tr>
</tbody>
</table>

SF: square feet

### Unit Costs

Table 13 summarizes the minimum, average, and maximum costs for each green roof component.

### Table 13. Green roof unit cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage Layer</td>
<td>SF</td>
<td>1</td>
<td>$3.10</td>
<td>$3.10</td>
<td>$3.10</td>
<td>No</td>
</tr>
<tr>
<td>Gravel</td>
<td>CF</td>
<td>1</td>
<td>$1.24</td>
<td>$1.24</td>
<td>$1.24</td>
<td>Not as an option for this BMP type</td>
</tr>
<tr>
<td>Root Barrier</td>
<td>SF</td>
<td>1</td>
<td>$2.28</td>
<td>$2.28</td>
<td>$2.28</td>
<td>No</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>CF</td>
<td>2</td>
<td>$3.41</td>
<td>$6.88</td>
<td>$10.35</td>
<td>Not as an option for this BMP type</td>
</tr>
<tr>
<td>Waterproof Membrane</td>
<td>SF</td>
<td>2</td>
<td>$9.31</td>
<td>$11.90</td>
<td>$14.49</td>
<td>No</td>
</tr>
</tbody>
</table>

n: number of facilities  
CF: cubic feet  
SF: square feet

Other unit costs that were not provided during this cost gathering effort and are currently not included in the SUSTAIN BMP cost database, but may be incorporated into green roof designs include:

- Mulch (CF)
- Grass (SF)
- Gravel (CF) – optional, sometimes used as ballast
- Perennials (SF or per unit) – optional
- Small Trees (SF or per unit) – optional
- Woody Shrubs (SF or per unit) – optional
- Outlet Drain (per unit)
- Irrigation System (SF) – optional

**Total Green Roof Cost**

Table 14 summarizes the minimum, average, and maximum construction and O&M costs for green roofs as a function of surface area (cost per square foot). Construction costs were calculated based on the unit cost information presented in Table 13 (when bid tabs and quantities were available) and jurisdictional “per square foot” costs (when provided). Note that these unit area facility costs do not necessarily reflect all associated construction costs because costs such as mobilization, temporary erosion and sediment control, and traffic control, were not included in the cost database. Design costs were not broken out separately from the total costs for these facilities.

**Table 14. Green roof project cost information.**

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>SF</td>
<td>12</td>
<td>$11.32</td>
<td>$33.06</td>
<td>$121.46</td>
<td>Yes (as Green Roof System)</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>SF</td>
<td>1</td>
<td>$0.10</td>
<td>$0.10</td>
<td>$0.10</td>
<td>No</td>
</tr>
</tbody>
</table>

n: number of facilities
SF: square feet

**Infiltration Trench**

Infiltration trenches are long, narrow stormwater facilities backfilled with a coarse stone aggregate, allowing for temporary storage of stormwater in the void spaces. They are generally installed at grade, but can also be installed underground using a prefabricated infiltration gallery.

**Projects**

Table 15 summarizes information related to infiltration trenches. Cost information for four infiltration facilities (three infiltration galleries and one drywell) from one city and one county was gathered for the Puget Sound BMP cost database.
Table 15. Infiltration trench project information.

<table>
<thead>
<tr>
<th>City/County</th>
<th>Project Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Lacey</td>
<td>2011 Street Overlay Project</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>City of Lacey</td>
<td>Carpenter Road Reconstruction</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>Thurston County</td>
<td>Evergreen Terrace - Phase 1</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>Thurston County</td>
<td>Hawaiian Court Stormwater Improvements</td>
<td>Bid tabs</td>
</tr>
</tbody>
</table>

Unit Costs

Table 16 summarizes the minimum, average, and maximum costs for each infiltration trench component.

Table 16. Infiltration trench unit cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>CF</td>
<td>3</td>
<td>$0.47</td>
<td>$0.63</td>
<td>$0.92</td>
<td>Yes</td>
</tr>
<tr>
<td>Grass</td>
<td>SF</td>
<td>1</td>
<td>$0.32</td>
<td>$0.32</td>
<td>$0.32</td>
<td>Yes</td>
</tr>
<tr>
<td>Gravel</td>
<td>CF</td>
<td>2</td>
<td>$0.78</td>
<td>$1.26</td>
<td>$1.74</td>
<td>Yes</td>
</tr>
</tbody>
</table>

n: number of facilities
CF: cubic feet
SF: square feet

Unit costs currently in the SUSTAIN BMP cost database that were not provided during the Puget Sound BMP cost database data gathering effort include:

- Backfilling (CF)
- Filter Fabric
- Grading/finishing (SF)
- Mulch – not required by Ecology
- Observation Well
- Perennials – not required by Ecology
- Soil/Planting Media – not required by Ecology

Total Infiltration Trench Cost

Table 17 summarizes the minimum, average, and maximum construction costs for infiltration trenches per unit and as a function of surface area (cost per square foot). Construction costs were calculated based on the unit cost information presented in Table 16 (when bid tabs and quantities were available) and jurisdictional “per square foot” costs (when provided). Note that these unit area facility costs do not necessarily reflect all associated construction costs because costs such as mobilization, temporary erosion and sediment control, and traffic control, were not included.
in the cost database. Design costs were not broken out separately from the total costs for these facilities. O&M costs were not provided by the jurisdictions submitting cost data for their infiltration trench facilities. None of the costs provided were for standard infiltration trenches since three of the designs involved infiltration galleries and once of the designs involved a drywell.

### Table 17. Infiltration trench project cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infiltration Trench</td>
<td>Per unit</td>
<td>1</td>
<td>$65,024</td>
<td>$65,024</td>
<td>$65,024</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>SF</td>
<td>2</td>
<td>$83.48</td>
<td>$95.95</td>
<td>$108.43</td>
<td>No</td>
</tr>
</tbody>
</table>

n: number of facilities
SF: square feet

### Porous Pavement

Porous pavement (i.e., permeable pavement) includes pervious concrete, porous asphalt, permeable pavers, and other forms of pervious or porous paving material (i.e., open-celled grids) intended to allow passage of water through the pavement section.

### Projects

Table 18 summarizes information related to porous pavement installations. Cost information for 22 porous pavement installations in 6 cities, 1 county, 1 port facility, and 7 vendors was gathered for the Puget Sound BMP cost database. Pierce County’s Sprinker Parking Lot LID project included two types of porous pavement and the City of Poulsbo’s Mesford Pervious Sidewalk and Parking Lane project evaluated three types of porous pavement.

### Unit Costs

Table 19 summarizes the minimum, average, and maximum costs for each porous pavement component.

Unit costs currently in the SUSTAIN BMP cost database that were not provided during the Puget Sound BMP cost database data gathering effort include:

- Grading/finishing (SF)
- Observation Well
Table 18. Porous pavement project and product information.

<table>
<thead>
<tr>
<th>City/County/Vendor</th>
<th>Project/Product Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Auburn</td>
<td>West Valley Highway Improvements Project</td>
<td>Bid tabs and takeoffs</td>
</tr>
<tr>
<td>ACF West</td>
<td>Grassy Pavers</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>Backstrom Curb &amp; Sidewalk, Inc.</td>
<td>Porous Concrete Sidewalk (4” thick)</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>Backstrom Curb &amp; Sidewalk, Inc.</td>
<td>Wilson Toyota, Mercedes</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>City of Bellingham</td>
<td>Northshore Water Quality EV-78</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>City of Issaquah</td>
<td>Central Park Lot</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>City of Poulsbo</td>
<td>Caldart Avenue Improvements Project</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>City of Poulsbo</td>
<td>Mesford Pervious Sidewalk and Parking Lane Project</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>City of Redmond</td>
<td>185th Avenue NE Extension</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>City of Redmond</td>
<td>Bear Creek Park Water Quality Facility</td>
<td>Bid tabs and drawings</td>
</tr>
<tr>
<td>Hastings Pavement Company, Inc.</td>
<td>Hastings Checker Block®</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>Mutual Materials</td>
<td>Eco Priora™ Pavers</td>
<td>Vendor phone request (recent Herrera project)</td>
</tr>
<tr>
<td>NW Linings</td>
<td>Hamilton Middle School – Seattle School District (Grasspave2)</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>NW Linings</td>
<td>Rainier Vista – Seattle Housing Authority (Gravelpave2)</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>Pierce County</td>
<td>139th Street E Cul-de-Sac</td>
<td>Bid tabs and drawings</td>
</tr>
<tr>
<td>Pierce County</td>
<td>Sprinker Parking Lot LID</td>
<td>Bid tabs and drawings</td>
</tr>
<tr>
<td>Port of Anacortes</td>
<td>O Avenue</td>
<td>E-mail from Port</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>Ballard Green Alleys</td>
<td>Life-cycle cost of Green Stormwater Infrastructure for the CSO LTCP report</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>Green Alleys</td>
<td>Life-cycle cost of Green Stormwater Infrastructure for the CSO LTCP report</td>
</tr>
<tr>
<td>Stoneway Concrete</td>
<td>Porous Concrete</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>Willamette Graystone</td>
<td>Aqua Bric® Pavers</td>
<td>Vendor phone request (recent Herrera project)</td>
</tr>
<tr>
<td>Willamette Graystone</td>
<td>Aqua Loc® Pavers</td>
<td>Vendor phone request (recent Herrera project)</td>
</tr>
</tbody>
</table>
Table 19. Porous pavement unit cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage Sand</td>
<td>CF</td>
<td>2</td>
<td>$1.40</td>
<td>$1.40</td>
<td>$1.40</td>
<td>No</td>
</tr>
<tr>
<td>Excavation</td>
<td>CF</td>
<td>4</td>
<td>$0.46</td>
<td>$0.72</td>
<td>$1.23</td>
<td>Yes</td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>SF</td>
<td>2</td>
<td>$0.20</td>
<td>$0.67</td>
<td>$1.14</td>
<td>Yes – with different units</td>
</tr>
<tr>
<td>Gravel1 (filter course)</td>
<td>SF</td>
<td>4</td>
<td>$0.08</td>
<td>$0.55</td>
<td>$1.15</td>
<td>Yes</td>
</tr>
<tr>
<td>Gravel2 (reservoir course)</td>
<td>CF</td>
<td>4</td>
<td>$0.96</td>
<td>$1.63</td>
<td>$3.52</td>
<td>Yes</td>
</tr>
<tr>
<td>Porous Paving Material</td>
<td>CY</td>
<td>1</td>
<td>$129.33</td>
<td>$129.33</td>
<td>$129.33</td>
<td>Yes</td>
</tr>
<tr>
<td>Porous Paving Material</td>
<td>SF</td>
<td>19</td>
<td>$1.36</td>
<td>$3.63</td>
<td>$7.54</td>
<td>Yes</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>Feet</td>
<td>4</td>
<td>$6.68</td>
<td>$18.26</td>
<td>$41.39</td>
<td>Yes</td>
</tr>
</tbody>
</table>

n: number of facilities
CF: cubic feet
SF: square feet

Total Porous Pavement Cost

Table 20 summarizes the minimum, average, and maximum construction and O&M costs for porous pavement as a function of surface area (cost per square foot). Construction costs were calculated based on the unit cost information presented in Table 19 (when bid tabs and quantities were available) and jurisdictional “per square foot” costs (when provided). Note that these unit area facility costs do not necessarily reflect all associated construction costs because costs such as mobilization, temporary erosion and sediment control, and traffic control, were not included in the cost database. Design costs are presented in Table 20 as a percentage of the corresponding construction cost. Design costs were calculated based on jurisdiction submittals and projects where both design and construction costs were provided.

Table 20. Porous pavement project cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>SF</td>
<td>15</td>
<td>$1.81</td>
<td>$14.41</td>
<td>$74.42</td>
<td>No</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>SF</td>
<td>1</td>
<td>$0.02</td>
<td>$0.02</td>
<td>$0.02</td>
<td>No</td>
</tr>
<tr>
<td>Design</td>
<td>%</td>
<td>3</td>
<td>10%</td>
<td>63%</td>
<td>90%</td>
<td>No</td>
</tr>
</tbody>
</table>

a Design costs are presented as a percentage of construction costs.
n: number of facilities
SF: square feet

Rain Barrel

Rain barrels are 50- to 60-gallon polyethylene storage containers that are used for water storage and reuse, typically in a residential land use setting.
Projects and Products

Table 21 summarizes information related to rain barrels. Cost information for 43 rain barrels from 2 cities and 16 vendors was gathered for the Puget Sound BMP cost database.

<table>
<thead>
<tr>
<th>City/Vendor</th>
<th>Project/Product Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaron's Rain Barrels</td>
<td>Standard Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Aquabarrel Rain Barrel</td>
<td>Classic Aquabarrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Arid Solutions</td>
<td>Octagon Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>City of Bellingham</td>
<td>Residential Stormwater Retrofit Project</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>City of Puyallup</td>
<td>Puyallup's 2011 Rain Garden Program</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>Cypress Designs</td>
<td>Freewater Rain Collection System</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Eagle Peak Containers, Inc.</td>
<td>Rain Collection Barrels</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Gardeners Supply Company</td>
<td>Deluxe Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Gardeners Supply Company</td>
<td>Flat-Back Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Gardeners Supply Company</td>
<td>Madison Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Gardeners Supply Company</td>
<td>Rainwater Urn</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Gardeners Supply Company</td>
<td>Santa Fe Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Grady Barrels</td>
<td>Grady Barrels</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Natural Rain Water</td>
<td>Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Dance Water Barrels</td>
<td>Rain Dance Water Barrels</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Ready</td>
<td>Rain Ready Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Villa Rain Barrels</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Agua Fria Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Big Blue Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Cubo Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Flat-Back Rain Collection Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Garden Pal Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Nino Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Peso Rain Barrels</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Rain Water Collector</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Rain Wizard Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rain Tank Depot</td>
<td>Spruce Creek Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>RainReserve</td>
<td>RainReserve Rain Barrel System (Oak Design)</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rainsaver Systems</td>
<td>80 Gallon Rainsaver Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Rainwater Harvesting Systems</td>
<td>RainPro, RainPro Plus, and RainPro Elite</td>
<td>Vendor website</td>
</tr>
<tr>
<td>Seattle Conservation Corps</td>
<td>Seattle Rain Barrels</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Aquaduct Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Channel Islands Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Flora Sherwood Rain Barrel &amp; Planter</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Forester Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Great American Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Mega Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Niagara Falls Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Ocean Breeze Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Prism Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Shower Saver Rain Barrel</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>The Rain Catcher</td>
<td>Vendor website</td>
</tr>
<tr>
<td>The Green Culture</td>
<td>Wood Grain Rain Barrel</td>
<td>Vendor website</td>
</tr>
</tbody>
</table>
Total Rain Barrel Cost

Table 22 summarizes the minimum, average, and maximum costs for rain barrels per unit. The City of Bellingham and City of Puyallup rain barrel costs included installation costs, but the rain barrel costs obtained from vendor websites did not include installation costs. Additional costs may also need to be added for shipping and tax.

Table 22. Rain barrel cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection/Use kit</td>
<td>Per Unit</td>
<td>1</td>
<td>$13.45</td>
<td>$13.45</td>
<td>$13.45</td>
<td>No</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>Per Unit</td>
<td>9</td>
<td>$2.59</td>
<td>$25.15</td>
<td>$31.04</td>
<td>Yes</td>
</tr>
<tr>
<td>Installation</td>
<td>Per Unit</td>
<td>2</td>
<td>$21.97</td>
<td>$25.99</td>
<td>$30.01</td>
<td>No</td>
</tr>
<tr>
<td>Rain Barrel</td>
<td>Per Unit</td>
<td>53</td>
<td>$25.35</td>
<td>$174.49</td>
<td>$361.10</td>
<td>Yes</td>
</tr>
</tbody>
</table>

n: number of products (multiple costs [low, mid range, and high] were included for some rain barrels)

Vegetated Filter Strip

Vegetated filter strips (i.e., buffer strips) are grassy areas with gentle slopes that treat stormwater runoff from adjacent paved areas before it becomes concentrated into a discrete channel.

Projects

Table 23 summarizes information related to vegetated filter strip facilities. Cost information for 2 vegetated filter strip installations in 1 city and for 1 WSDOT project was gathered for the Puget Sound BMP cost database. Both vegetated filter strip installations are compost-amended vegetated filter strips (CAVFS).

Table 23. Vegetated filter strip project information.

<table>
<thead>
<tr>
<th>City/WSDOT</th>
<th>Project Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Redmond</td>
<td>SR 202 and NE 124th Street Intersection</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road</td>
<td>WSDOT website</td>
</tr>
</tbody>
</table>

Total Vegetated Filter Strip Cost

Table 24 summarizes the minimum, average, and maximum construction costs for vegetated filter strips a function of surface area (cost per square foot). Construction costs were provided with the submittals. Design costs were not broken out separately from the total costs. O&M costs for vegetated filter strips were not provided by the City of Redmond or WSDOT.
### Table 24. Vegetated filter strip project cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Cost</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetated Filter Strip</td>
<td>SF</td>
<td>2</td>
<td>$1.17</td>
<td>$1.28</td>
</tr>
</tbody>
</table>

n: number of facilities

SF: square feet

Unit costs currently in the SUSTAIN BMP cost database that were not provided during the Puget Sound BMP cost database data gathering effort include:

- Grading/finishing (SF)
- Grass (SF)

Other unit costs that were not provided during this cost gathering effort and are currently not included in the SUSTAIN BMP cost database, but may be incorporated into vegetated filter strip designs include:

- Excavation (CF) – necessary for topsoil installation
- Gravel (CF) – used in Ecology manual design as a flow spreader at the inlet
- Topsoil (CF) – design could include a soil/planting media component
- Compost (CF) – included for the CAVFS option
- Woody Shrubs (SF or per unit) – could be incorporated into a CAVFS design

### Wet Pond

Wet ponds are facilities that contain permanent pools of water filled with the first flush runoff from a storm event. Wet ponds are designed to optimize water quality by providing retention time to settle out suspended solids (and associated pollutants) and to allow biologic activity to occur (to treat nutrients and organic pollutants).

### Projects

Table 25 summarizes information related to wet pond facilities. Cost information for 25 wet ponds in 3 cities, 1 county, and WSDOT was gathered for the Puget Sound BMP cost database.
Table 25. Wet pond project information.

<table>
<thead>
<tr>
<th>City/County/WSDOT</th>
<th>Project Name</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Bellingham</td>
<td>Northridge Sand Filter Detention Pond</td>
<td>Cost request spreadsheet</td>
</tr>
<tr>
<td>City of Lacey</td>
<td>2011 Street Overlay Project</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>Seattle Public Utilities</td>
<td>Norfolk - MLK Way Sub-basin Stormwater Improvements Project</td>
<td></td>
</tr>
<tr>
<td>Thurston County</td>
<td>Mallard Pond Wetland Enhancement Project</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>Thurston County</td>
<td>Thompson Place – Phase 1 - 3</td>
<td>Bid tabs</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road - Basin CR-1</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-10</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-11</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-12</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-13</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-14</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-15</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-16</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-17</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-18</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 – 180th to Maple Valley - Detention Pond A</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 – 180th to Maple Valley - Detention Pond B</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 – 180th to Maple Valley - Detention Pond G</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 – 180th to Maple Valley - Detention Pond H</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 – 180th to Maple Valley - Detention Pond J</td>
<td>WSDOT website</td>
</tr>
<tr>
<td>WSDOT</td>
<td>SR 18 – 180th to Maple Valley - Detention Pond M</td>
<td>WSDOT website</td>
</tr>
</tbody>
</table>

Unit Costs

Table 26 summarizes the minimum, average, and maximum costs for each wet pond component.

Unit costs currently in the SUSTAIN BMP cost database that were not provided during the Puget Sound BMP cost database data gathering effort include:

- Grading/finishing (SF)
Table 26. Wet pond unit cost information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird Exclusion Netting</td>
<td>Acre</td>
<td>1</td>
<td>$30,365</td>
<td>$30,365</td>
<td>$30,365</td>
<td>No</td>
</tr>
<tr>
<td>Debris Cage</td>
<td>Per Unit</td>
<td>1</td>
<td>$1,757</td>
<td>$1,757</td>
<td>$1,757</td>
<td>No</td>
</tr>
<tr>
<td>Dewatering</td>
<td>Constant</td>
<td>7</td>
<td>$10,545</td>
<td>$16,068</td>
<td>$21,089</td>
<td>No</td>
</tr>
<tr>
<td>Excavation</td>
<td>CF</td>
<td>4</td>
<td>$0.39</td>
<td>$1.01</td>
<td>$1.80</td>
<td>Yes</td>
</tr>
<tr>
<td>Grass</td>
<td>SF</td>
<td>5</td>
<td>$0.03</td>
<td>$0.33</td>
<td>$1.22</td>
<td>Yes</td>
</tr>
<tr>
<td>Gravel</td>
<td>CF</td>
<td>4</td>
<td>$1.03</td>
<td>$3.28</td>
<td>$6.97</td>
<td>Yes</td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>Per Unit</td>
<td>1</td>
<td>$1,086</td>
<td>$1,086</td>
<td>$1,086</td>
<td>Yes</td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>Per Unit</td>
<td>2</td>
<td>$2,550</td>
<td>$9,474</td>
<td>$16,397</td>
<td>Yes</td>
</tr>
<tr>
<td>Seal</td>
<td>SF</td>
<td>1</td>
<td>$0.79</td>
<td>$0.79</td>
<td>$0.79</td>
<td>Yes</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>CF</td>
<td>2</td>
<td>$0.42</td>
<td>$1.16</td>
<td>$1.89</td>
<td>No</td>
</tr>
<tr>
<td>Woody Shrubs</td>
<td>Per Unit</td>
<td>1</td>
<td>$23.08</td>
<td>$23.08</td>
<td>$23.08</td>
<td>No</td>
</tr>
</tbody>
</table>

n: number of facilities
CF: cubic feet
SF: square feet

Total Wet Pond Cost

Table 27 summarizes the minimum, average, and maximum construction and O&M costs for wet ponds as a function of volume (cost per cubic foot) or surface area (cost per square foot). Construction costs were calculated based on the unit cost information presented in Table 26 (when bid tabs and quantities were available) and jurisdictional “per square foot” costs (when provided). Note that these unit area facility costs do not necessarily reflect all associated construction costs because costs such as mobilization, temporary erosion and sediment control, and traffic control, were not included in the cost database. Design costs are presented in Table 27 as a percentage of the corresponding construction cost. Design costs were calculated based on jurisdictions submittals and projects where both design and construction costs were provided.

Table 27. Wet pond cost project information.

<table>
<thead>
<tr>
<th>BMP Component</th>
<th>Unit</th>
<th>n</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>Currently in SUSTAIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Pond</td>
<td>CF</td>
<td>23</td>
<td>$1.26</td>
<td>$8.26</td>
<td>$40.86</td>
<td>No</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>CF</td>
<td>1</td>
<td>$23.12</td>
<td>$23.12</td>
<td>$23.12</td>
<td>No</td>
</tr>
<tr>
<td>Design a</td>
<td>%</td>
<td>2</td>
<td>5%</td>
<td>12%</td>
<td>19%</td>
<td>No</td>
</tr>
</tbody>
</table>

*a Design costs are presented as a percentage of construction costs.
n: number of facilities
CF: cubic feet
SF: square feet
Next Steps

The Puget Sound Stormwater BMP cost database was used in a pilot application of SUSTAIN in 2012 (Herrera 2012). However, Ecology also will evaluate options for periodic updates to the database if beneficial for other projects. Refer to the following website for additional information and updates: http://www.ecy.wa.gov/programs/eap/toxics/sustainmodeling.html.

References

ATTACHMENT 1

Master Puget Sound BMP Cost Database
<table>
<thead>
<tr>
<th>BMPTypeID</th>
<th>BMPCode</th>
<th>BMPType</th>
<th>ComponentID</th>
<th>ComponentText</th>
<th>UnitDesc</th>
<th>UnitCost</th>
<th>ConvFactor</th>
<th>AdjustedCost</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BIORETENTIONBASIN</td>
<td>BIORETENTION BASIN</td>
<td>2</td>
<td>Excavation</td>
<td>Cubic Fee</td>
<td>1.11</td>
<td>1.03</td>
<td>1.15</td>
<td>Lawn soil service &amp; pump out. Parking lot excavation, incl. haul. City</td>
</tr>
<tr>
<td>1</td>
<td>BIORETENTIONBASIN</td>
<td>BIORETENTION BASIN</td>
<td>3</td>
<td>Excavation</td>
<td>Cubic Fee</td>
<td>1.49</td>
<td>1.10</td>
<td>1.58</td>
<td>Structure excavation Class B, does not incl. haul and disposal. County</td>
</tr>
<tr>
<td>1</td>
<td>BIORETENTIONBASIN</td>
<td>BIORETENTION BASIN</td>
<td>4</td>
<td>Excavation</td>
<td>Cubic Fee</td>
<td>1.63</td>
<td>1.06</td>
<td>1.73</td>
<td>Bedding around underdrain pipe.</td>
</tr>
<tr>
<td>1</td>
<td>BIORETENTIONBASIN</td>
<td>BIORETENTION BASIN</td>
<td>5</td>
<td>Fabric</td>
<td>Per Unit</td>
<td>0.37</td>
<td>1.06</td>
<td>0.39</td>
<td>70 sq yds used.</td>
</tr>
<tr>
<td>1</td>
<td>BIORETENTIONBASIN</td>
<td>BIORETENTION BASIN</td>
<td>6</td>
<td>Fabric</td>
<td>Per Unit</td>
<td>1.12</td>
<td>1.03</td>
<td>1.19</td>
<td>70 sq yds used.</td>
</tr>
<tr>
<td>1</td>
<td>BIORETENTIONBASIN</td>
<td>BIORETENTION BASIN</td>
<td>7</td>
<td>Fabric</td>
<td>Per Unit</td>
<td>1.17</td>
<td>1.06</td>
<td>1.26</td>
<td>70 sq yds used.</td>
</tr>
<tr>
<td>1</td>
<td>BIORETENTIONBASIN</td>
<td>BIORETENTION BASIN</td>
<td>8</td>
<td>Soil amendment</td>
<td>Per Unit</td>
<td>0.32</td>
<td>1.07</td>
<td>0.34</td>
<td>High O&amp;M cost.</td>
</tr>
<tr>
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<td>9</td>
<td>Soil amendment</td>
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<td>0.37</td>
<td>1.06</td>
<td>0.39</td>
<td>Low cost for O&amp;M by SC.</td>
</tr>
<tr>
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<td>Mineral aggregate, Type 2</td>
<td>Per Unit</td>
<td>6.35</td>
<td>1.03</td>
<td>6.57</td>
<td>Mid range cost.</td>
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<td>Gravel backfill around underdrain pipe</td>
<td>Cubic Fee</td>
<td>1.69</td>
<td>1.03</td>
<td>1.75</td>
<td>Low cost for O&amp;M by SC.</td>
</tr>
<tr>
<td>1</td>
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<td>BIORETENTION BASIN</td>
<td>12</td>
<td>Bark or wood chip mulch</td>
<td>Per Unit</td>
<td>0.74</td>
<td>1.03</td>
<td>0.77</td>
<td>Cost provided is per CF, however pricing is based on CY (industry std.).</td>
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<tr>
<td>1</td>
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<td>Sodding</td>
<td>Per Unit</td>
<td>1.48</td>
<td>1.10</td>
<td>1.63</td>
<td>High cost (turf mix) City</td>
</tr>
<tr>
<td>1</td>
<td>BIORETENTIONBASIN</td>
<td>BIORETENSION BASIN</td>
<td>14</td>
<td>Observation Well</td>
<td>Per Unit</td>
<td>1.11</td>
<td>1.26</td>
<td>1.40</td>
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<td>Inlet Structure</td>
<td>Per Unit</td>
<td>7.65</td>
<td>1.03</td>
<td>7.94</td>
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</tr>
<tr>
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<td>16</td>
<td>Perennial</td>
<td>Per Unit</td>
<td>2.5</td>
<td>1.03</td>
<td>2.66</td>
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<td>Small Trees</td>
<td>Per Unit</td>
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<td>1.03</td>
<td>0.23</td>
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<td>BIORETENTION BASIN</td>
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<td>Soil/Planting Medium</td>
<td>Per Unit</td>
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<td>Ditch excavation, including haul</td>
<td>Cubic Fee</td>
<td>1.63</td>
<td>1.06</td>
<td>1.73</td>
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<td>BIORETENTION BASIN</td>
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<td>Structure excavation Class B, does not incl. haul and disposal.</td>
<td>Cubic Fee</td>
<td>9.75</td>
<td>1.03</td>
<td>10.09</td>
<td>8-inch diameter underground pipe, installed for project.</td>
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<tr>
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<td>BIORETENTION BASIN</td>
<td>21</td>
<td>Perennial</td>
<td>Per Unit</td>
<td>1.11</td>
<td>1.06</td>
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Note: City/County/Per Private Vendor.
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<td>Woody Shrub</td>
<td>Per Unit</td>
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<td>220.50</td>
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<td>Per Unit</td>
<td>179.00</td>
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<td>190.55</td>
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<td>2</td>
<td>Buffer Strip</td>
<td>120</td>
<td>Vegetated Buffer Strip</td>
<td>Per Unit</td>
<td>50.00</td>
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<td>Cistern</td>
<td>115</td>
<td>Cistern Per Unit</td>
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<td>Cistern Cubic Fee</td>
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<td>Cistern Per Unit</td>
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<td>Per Unit</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6</td>
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<td>7</td>
<td>Fire hydrant</td>
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<tr>
<td>8</td>
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<td>122</td>
<td>Ground Cover</td>
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<td></td>
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<td>9</td>
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<td>Ground Cover</td>
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<td></td>
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<td></td>
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<tr>
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<td>Streambed Cobble</td>
<td></td>
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<td>Per Unit</td>
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<td>45.14</td>
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<td>32.97</td>
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<td>1.09</td>
<td>20.91</td>
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<td>1.10</td>
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<td>1.10</td>
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<td>1.10</td>
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<td>15.94</td>
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Note: Includes design, spec, project, and associated adjusted construction cost: $115.80 per SF.
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<th>Description</th>
<th>Note</th>
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<tr>
<td>70001</td>
<td>INFILTRATION TRENCH</td>
<td>Irrigation Trench</td>
<td>Infiltration Trench</td>
<td>Square Fee</td>
<td>0.43</td>
<td>1.07</td>
<td>0.46</td>
<td>Parking lot excavation, including haulage</td>
<td>Vendor</td>
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<tr>
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<td>Irrigation Trench</td>
<td>Infiltration Trench</td>
<td>Square Fee</td>
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<td>0.32</td>
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<td>Irrigation Trench</td>
<td>Infiltration Trench</td>
<td>Square Fee</td>
<td>0.62</td>
<td>1.26</td>
<td>0.78</td>
<td>1 1/2&quot; washed drain rock, assumes 1.4 TN/C</td>
<td>Vendor</td>
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<tr>
<td>70001</td>
<td>INFILTRATION TRENCH</td>
<td>Irrigation Trench</td>
<td>Infiltration Trench</td>
<td>Square Fee</td>
<td>0.19</td>
<td>1.03</td>
<td>0.20</td>
<td>Based on $5/C</td>
<td>Vendor</td>
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<td>70001</td>
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<td>Irrigation Trench</td>
<td>Infiltration Trench</td>
<td>Square Fee</td>
<td>0.89</td>
<td>1.03</td>
<td>0.92</td>
<td>Extra excavation inc. haulage</td>
<td>Vendor</td>
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<tr>
<td>60001</td>
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<td>Irrigation Trench</td>
<td>Infiltration Trench</td>
<td>Cubic Fee</td>
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<td>1.03</td>
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<td>Vendor</td>
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<td>Irrigation Trench</td>
<td>Infiltration Trench</td>
<td>Square Fee</td>
<td>0.89</td>
<td>1.03</td>
<td>0.92</td>
<td>Extra excavation inc. haulage</td>
<td>Vendor</td>
</tr>
<tr>
<td>10000</td>
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<td>Irrigation Trench</td>
<td>Infiltration Trench</td>
<td>Square Fee</td>
<td>57</td>
<td>1.03</td>
<td>58.98</td>
<td>Low (25 gal)</td>
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<tr>
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<td>Infiltration Trench</td>
<td>Square Fee</td>
<td>5</td>
<td>1.03</td>
<td>5.10</td>
<td>Vendo</td>
<td>Vendor</td>
</tr>
<tr>
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<td>Irrigation Trench</td>
<td>Infiltration Trench</td>
<td>Square Fee</td>
<td>5</td>
<td>1.03</td>
<td>5.10</td>
<td>Vendo</td>
<td>Vendor</td>
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<tr>
<td>10000</td>
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<td>Infiltration Trench</td>
<td>Square Fee</td>
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<td>3.10</td>
<td>Vendo</td>
<td>Vendor</td>
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<td>Irrigation Trench</td>
<td>Infiltration Trench</td>
<td>Square Fee</td>
<td>2.6</td>
<td>1.03</td>
<td>2.78</td>
<td>Construction incentive cost per SF, inc. O&amp;M, vendor</td>
<td>Vendor</td>
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</tbody>
</table>

Note: BMPTypeID corresponds to the identifier for the BMP, BMPType indicates the type of BMP, Component represents the specific component within the BMP, ComponentText provides a more descriptive name, UnitDesc describes the unit of measurement for the cost, UnitCost is the base cost per unit, CostFactor is a multiplier for adjusting the cost, AdjustedCost is the final cost after applying the multiplier, Description provides a brief explanation of the BMP, and Note details any special considerations or vendor notes.
## Porous Paving Materials

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Weight</th>
<th>Unit Price</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EkoPave</td>
<td>Open Celled Grid Paver</td>
<td>54 gallons</td>
<td>$99.25</td>
<td>Low cost, installation of Open Celled Grid Paver</td>
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<tr>
<td>EkoPave</td>
<td>Open Celled Grid Paver</td>
<td>55 gallons</td>
<td>$102.69</td>
<td>Low cost, installation of Open Celled Grid Paver</td>
</tr>
<tr>
<td>EkoPave</td>
<td>Open Celled Grid Paver</td>
<td>50-55 gallon</td>
<td>$32-60</td>
<td>Low cost, installation of Open Celled Grid Paver</td>
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</tbody>
</table>

### Design & Construction Costs

- **High cost**: $76.05
- **50-55 gallon**: $102.69
- **Design**: $32-60

### Design As Percent of Construction

- **High cost**: 1.03%
- **50-55 gallon**: 1.094%
- **Design**: 1.06%

### Associated Costs

- **Labor and equipment and plastic**: $11.13 per sf
- **Underdrain Pipes (20,000 to 75,000 SF project)**: $1.07
- **Underdrain Pipes (75,000 SF +)**: $1.03

### Soft Costs

- **70% Soft costs (70% of construction costs)**: $35.29 per sf
- **90% Soft costs (90% of construction costs)**: $27.80 per sf

### Additional Notes

- **Shipping**: Included in the cost
- **Tax**: Not included in the cost
- **Labor and equipment**: Included in the cost

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## Additional Materials

- **Gravel**: $4.09 per cubic yard
- **Sand**: $4.63 per cubic yard
- **Concrete**: $5.35 per cubic yard
- **Underlaying**: $6.76 per cubic yard
- **Filter Fabric**: $0.96 per square foot
- **Geotextile**: $0.92 per square foot
- **Eco Priora pavers**: $2.63 per square foot
- **Garden Watersaver Downspout**: $31.76 per unit

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### O&M Costs

- **O&M Square Fee**: $1.81 per square foot
- **O&M Square Fee**: $1.81 per square foot
- **O&M Square Fee**: $1.81 per square foot

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### Contact Information

- **EkoPave**: 101-125 4th Avenue, New York, NY 10001
- **EkoPave**: 101-125 4th Avenue, New York, NY 10001
- **EkoPave**: 101-125 4th Avenue, New York, NY 10001

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### Additional Notes

- **Free shipping**: Included in the cost
- **Low cost**: $50-60 per gallon, does not inc. shipping
- **Mid cost**: $75-100 per gallon, does not inc. shipping
- **High cost**: $100-125 per gallon, does not inc. shipping
<table>
<thead>
<tr>
<th>City/County/Park/Private Vendor</th>
<th>DesignAsPercent Construction Notes</th>
<th>Square Fee</th>
<th>Total</th>
<th>O&amp;M</th>
<th>Notes</th>
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<tr>
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<td>101 Installation</td>
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<td>51%</td>
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**Notes:**
- O&M: Operation and Maintenance charges.
- DesignAsPercent Construction Notes: Description of work and associated costs.
- Square Fee: Cost per square foot of the work.
- Total: Total cost for the installation.
- O&M: Total Operation and Maintenance charges.
- Notes: Additional notes on the work performed.
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</tbody>
</table>

- WSDOT: Washington State Department of Transportation
- TMDL: Total Maximum Daily Load
- BMP: Best Management Practice
- Unit Cost: Cost per unit
- Cost/Face: Cost per face
- Adjusted Cost: Adjusted cost
- Description/Notes: Description and notes for each BMP.
- City/County/Port/Private/Vendor: City, county, port, private, or vendor responsible for BMP.

Note: Costs are based on typical conditions and may vary depending on site-specific factors.
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Jim Groh
O Avenu
Publi
1-800-876-552

Don Backstrom don@backstromconcrete.com 360.403.486

Jacob Sweetin
Northshore Water Quality EV-7
Publi

Kevin Earle
Publi

Wreilly@cob.or
info@cypressdesigns.com 360-224-154

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<td>POROUS PAVEMEN</td>
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<td>8</td>
<td>RAINBARRE</td>
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**Notes:**
- BMPTypeID: Unique identifier for each BMP.
- BMPCode: Code associated with each BMP.
- BMPType: Type of BMP, e.g., RAINBARRE.
- ComponentID: Identification number for each component.
- FundingSource: Sources contributing to the funding of BMPs, including Department of Ecology, Capacity Grant, U.S. Army Corps of Engineers, SSWUN, etc.
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BMPCode
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ComponentID
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FundingSource
NA
NA
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NA
NA
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SSWU
NA
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SSWU
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NA
NA
NA
NA
NA
NA
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NA
$519,905 Department of Ecology stormwater grant
NA
SSWU
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SSWU
SSWU

1‐18


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<td>BIOTREATMENTBASIN</td>
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<td>BUFFER STRIP</td>
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<td>4</td>
<td>DRYPOND</td>
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<td>GREEN ROOF</td>
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<td>POROUSPAVEMENT</td>
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<td>8</td>
<td>RAINBARREL</td>
<td>RAIN BARREL</td>
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<td>9</td>
<td>VEGETATIVESWALE</td>
<td>VEGETATIVE SWALE</td>
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<tr>
<td>10</td>
<td>WETPOND</td>
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<th>Components_Desc</th>
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<tbody>
<tr>
<td>2</td>
<td>Excavation</td>
<td>Using light equipment</td>
<td></td>
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<tr>
<td>3</td>
<td>Filter Fabric</td>
<td>Can be placed between gravel reservoir and underlying/overlying soil to reduce clogging of the reservoir void spaces</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Grass</td>
<td>Sod</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Gravel1</td>
<td>Porous pavement filter course, smaller particle sizes (1/2 - 1 1/2&quot;)</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Gravel2</td>
<td>Porous pavement base (or reservoir) course, bedding around underdrain pipe in bioretention facilities, backfill for drywells and washed drain rock in infiltration trenches; slightly larger particle sizes, no fines (1 1/2&quot; to 3&quot;)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Gravel3</td>
<td>Erosion control (rocks/rip-rap) used in constructed wetland and wet pond designs</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Green Roof System</td>
<td>Total cost for the installed facility (per square foot)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Gutter Connection</td>
<td>Connection assembly</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Inlet Structure</td>
<td>Used to direct piped inflow into facility</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Mulch</td>
<td>Shredded hardwood</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>O&amp;M</td>
<td>Approximate annual operation and maintenance costs (per square foot)</td>
<td></td>
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<tr>
<td>14</td>
<td>Observation Well</td>
<td>4&quot; PVC pipe for monitoring water depth</td>
<td></td>
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<tr>
<td>15</td>
<td>Outlet Structure</td>
<td>Used to connect facility back into drainage system</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Perennials</td>
<td>Assumes planting density of 1’ o.c. for 1 gallon plants</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Porous Paving Material</td>
<td>Top course (specify asphalt, concrete, pavers, or open-celled grid)</td>
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</tr>
<tr>
<td>18</td>
<td>Rain Barrel</td>
<td>50-60 gallon rain barrel</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Seal</td>
<td>Bentonite (as opposed to geotextile)</td>
<td></td>
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<tr>
<td>20</td>
<td>Small Trees</td>
<td>Assumes planting densities of 15’ o.c.</td>
<td></td>
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<tr>
<td>21</td>
<td>Soil/Planting Media</td>
<td>Highly permeable soil mixed thoroughly with compost amendment</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Underdrain Pipe</td>
<td>4&quot; perforated PVC</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Woody Shrubs</td>
<td>Assumes planting densities of 3’ o.c.</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Bird Exclusion Netting</td>
<td>Polypropylene mesh netting for keeping birds out of wet ponds</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>Installation</td>
<td>Labor cost for rain barrel installation</td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>Check Dam</td>
<td>A low, fixed structure (constructed of timber, loose rock, masonry, or concrete) used to control water flow in a bioswale or bioretention facility</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>Compost</td>
<td>Organic residue or a mixture of organic residues and soil</td>
<td></td>
</tr>
<tr>
<td>104</td>
<td>Constructed Wetland</td>
<td>Total cost for the installed facility (per square foot)</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>Debris Cage</td>
<td>Cage-like attachments (polyethylene or metal) used to prevent floating and particulate debris from clogging outlet control structures.</td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>Design</td>
<td>Estimated cost to develop plans and specifications (per square foot)</td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>Dewatering</td>
<td>Removal and control of ground water by pumping, drainage, or evaporation to allow construction activities to proceed</td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>Emergents</td>
<td>Aquatic plants rooted below the water surface (or in an area that is periodically submerged) and extend above the water surface</td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>Wet Pond</td>
<td>Total cost for the installed facility (per cubic foot)</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>Waterproof Membrane</td>
<td>PVC, Hypalon, rubber (EPDM), polyolins (can be part of green roof design)</td>
<td></td>
</tr>
<tr>
<td>111</td>
<td>Screen</td>
<td>Prevents mosquitoes, leaves, and debris from entering cisterns and rain barrels</td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>Connection/Use kit</td>
<td>Optional rain barrel components (includes overflow hose, splitter)</td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>Drainage Layer</td>
<td>Aggregate and/or manufactured material (can be part of green roof design)</td>
<td></td>
</tr>
<tr>
<td>114</td>
<td>Drainage Sand</td>
<td>Sand installed below reservoir course (can be part of porous pavement design)</td>
<td></td>
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<tr>
<td>115</td>
<td>Cistern</td>
<td>Storage tank made out of fiberglass, concrete, polyethylene, metal, wood, etc. Total cost for the installed facility (per cubic foot)</td>
<td></td>
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<tr>
<td>116</td>
<td>Infiltration Trench</td>
<td>Total cost for the installed facility (per square foot)</td>
<td></td>
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<tr>
<td>117</td>
<td>Bioretention</td>
<td>Total cost for the installed facility (per square foot)</td>
<td></td>
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<tr>
<td>119</td>
<td>Root Barrier</td>
<td>Dense inorganic material (polyethylene, EPDM, filter fabric) that inhibits root penetration (can be part of green roof design)</td>
<td></td>
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<tr>
<td>120</td>
<td>Vegetated Buffer Strip</td>
<td>Total cost for the installed facility (per square foot)</td>
<td></td>
</tr>
<tr>
<td>121</td>
<td>Ground Cover</td>
<td>Low-lying plants requiring minimal maintenance</td>
<td></td>
</tr>
<tr>
<td>122</td>
<td>Grassed Swale</td>
<td>Total cost for the installed facility (per square foot)</td>
<td></td>
</tr>
<tr>
<td>123</td>
<td>Grassed Lined Rain Garden</td>
<td>Total cost for the installed facility (per square foot)</td>
<td></td>
</tr>
<tr>
<td>124</td>
<td>Streambed Cobbles</td>
<td>4&quot; streambed cobbles</td>
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</tr>
<tr>
<td>125</td>
<td>Porous Pavement</td>
<td>Total cost for the installed facility (per square foot)</td>
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Cost Request Forms Submitted for the Puget Sound BMP Cost Database
Bioretention
Bioretention Cost Request Form

City/County/Company Name: City of Auburn
Contact Name: Jacob Sweeting
Contact Email: jsweeting@auburnwa.gov
Contact Phone: 253-804-5059

**Project Information**

<table>
<thead>
<tr>
<th>Project Name</th>
<th>West Valley Highway Improvements</th>
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<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
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<tr>
<td>Construction Date(s):</td>
<td>2011</td>
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<tr>
<td>Total Project Cost:</td>
<td>$73,579 (total bioretention swale cost)</td>
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<tr>
<td>Funding Source (if Public Project):</td>
<td>NA</td>
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Brief Project Description (include number and types of BMPs installed):

Bioretention swale = 690 LF (7.5 SF cross-sectional area)

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation (if used)</td>
<td>cubic feet</td>
<td>$1.11</td>
<td>Ditch excavation, including haul</td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td>$0.87</td>
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<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td>$1.11</td>
<td>Lawn sod</td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td>$2.14</td>
<td>Pea gravel, assumes 1 ton = 1.3 CY</td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$1.67</td>
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<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td>$40</td>
<td>8-inch diameter</td>
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<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
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</table>

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$21.33</td>
<td>690’ length, assumes 5’ width</td>
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<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
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<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
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<td></td>
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</tbody>
</table>

**Additional Notes or Information**

- Excavation - $30/CY
- Filter Fabric - $7.80/SY
- Grass - $10/SY
- Gravel - $75/TN
- Soil - $45/CY
**Bioretention Cost Request Form**

**City/County/Company Name:** City of Bellingham  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** NA

### Project Information

- **Project Name:** Bloedel Donovan Park  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2003  
- **Total Project Cost:** $12,820  
- **Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed):**

Bloedel Donovan Park has a heavily used parking lot that drains into Lake Whatcom. The City retrofitted a 550-square-foot section in the parking lot near the catch basin with a rain garden to reduce runoff into the lake. The rain garden treats runoff from about 80 parking spaces and two parking lanes.

Source: Reining in the Rain (Bellingham and PSAT 2004)

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td>Approx. 18 inches of drain rock</td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
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<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td>Amended an 18- to 24-inch layer of sand with 20 to 25% organic material</td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
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### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$23.30</td>
<td>$500 of rain garden</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

The cost of the rain garden retrofit at Bloedel Donovan Park (2003):

- Labor: $3,600
- Vehicle use: $1,900
- 1 ½ day excavator rental: $500
- Washed rock: $895
- Amended soil: $1,650
- PVC/grates/catch basins/fabric/other misc: $1,000
- Concrete: $1,200
- Asphalt: $1,200
- Debris removal: $300
- Plants: $400
- WCC crew planting time: $265

**TOTAL:** $12,820

*Soil mixed with compost*
**Bioretention Cost Request Form**

**City/County/Company Name:** City of Bellingham  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** NA

---

**Project Information**

**Project Name:** City Hall  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2003  
**Total Project Cost:** $5,600  
**Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed):**

At the Bellingham City Hall, City workers converted three of the 60 spaces in the parking lot into a rain garden.

Source: Reining in the Rain (Bellingham and PSAT 2004)

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$18.67</td>
<td>300 sf rain garden</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Additional Notes or Information**
Bioretention Cost Request Form

City/County/Company Name: City of Bellingham  
Contact Name: William M. Reilly  
Contact Email: wreilly@cob.org  
Contact Phone: 360-778-7955

Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>EV-71 Flynn Street Water Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2010 (June - September)</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$120,700</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>Storm and Surface Water Utility</td>
</tr>
</tbody>
</table>

Brief Project Description (include number and types of BMPs installed):

Project was reforestation of right of way with all street water running into simulated forest duff layer acting as bioretention. Project was to capture all water and absorb and release water to ground. Special design to limit phosphorus runoff to phosphorus limited water body (Lake Whatcom). Provides treatment for approx. 1,600 lf of roadway.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td>$0.37</td>
<td>70 SY used</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td>$2.42</td>
<td>80 tons cobble and crsrd @ $36.30/ton</td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td>$0.64</td>
<td>1,500 CY of Hog Fuel</td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$4.12</td>
<td>29,274 sf planted retrofit area</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$0.51</td>
<td>29,274 sf planted retrofit area</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

This may be called a bioretention area but it is generally encapsulating both sides of the roadway within a buffer of mulch and plantings 20 feet wide in one direction and 30 feet wide in the other direction with a 30 foot wide street. This roadway had the added benefit of having no driveways in the treatment section area. NOTE: calculations above for design include survey, CAD, and engineering. This is a special design to capture all water into mulch beds for infiltration. Design is to prevent phosphorus discharge. Hog fuel was used due to its low soluble reactive phosphorus content while still providing soil rhizomes.
## Bioretention Cost Request Form

**City/County/Company Name:** City of Issaquah  
**Contact Name:** Kerry Ritland, PE  
**Contact Email:** KerryR@ci.issaquah.wa.us  
**Contact Phone:** (425) 837-3410

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Central Park Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$510,651</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>$316,500 Department of Ecology LID grant</td>
</tr>
</tbody>
</table>

**Brief Project Description (include number and types of BMPs installed):**

62,000 square foot pervious asphalt parking lot with an 8000 sf rain garden (for overflow)

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$4.25</td>
<td>8000 sf rain garden</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information
Bioretention Cost Request Form

City/County/Company Name: Pierce County  
Contact Name: Dawn Anderson  
Contact Email: danders@co.pierce.wa.us  
Contact Phone: 253-798-4671

**Project Information**

Project Name: Sprinkler Parking Lot LID - Phase 2  
Project Type (Public or Private): Public  
Construction Date(s): 2010  
Total Project Cost: $1.25 million ($1.7 million for Phase 1 and 2)  
Funding Source (if Public Project): $1 million Department of Ecology LID grant ($115,000 grant for Phase 1)

Brief Project Description (include number and types of BMPs installed):
- 90,500 sf of impervious area converted to 48,500 sf porous concrete and 42,000 sf porous asphalt (Phase 1 and 2)
- 12,200 sf of impervious area converted to 3 bioretention areas (~ 600 plants)
- 305 sf recycled rubber sidewalk

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td>$0.43</td>
<td>Parking lot excavation, including haul</td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.43</td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/Finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td>$1.42</td>
<td>Bark or wood chip mulch</td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>each</td>
<td>$7</td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>each</td>
<td>$20</td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$1.63</td>
<td>Bioretention soil mix</td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>each</td>
<td>$7, 17.50, 410</td>
<td>Low, mid, high cost</td>
</tr>
</tbody>
</table>

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**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$5.91</td>
<td>8,500 sf, includes excavation, soil, mulch, and plants</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Additional Notes or Information**

- Excavation - $11.60/CY
- Mulch - $38.45/CY
- Bioretention soil mix = $44/CY
### Project Information

**Project Name:** Anthony’s Parking Lot  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2010  
**Total Project Cost:** $285,238 (total project cost)  
**Funding Source (if Public Project):** NA

Brief Project Description (include number and types of BMPs installed):  
Anthony’s parking lot (58,000 sf)

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
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<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
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</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
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</tbody>
</table>

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$44.47</td>
<td>Assumes 2,700 sf bioret. (inc. grading, landscaping, irrigation)</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

Storm Drain: $51,519, includes 2 Filterra Units, catch basin, and other underground storm drain piping  
Grading and Bioretention: $85,885, included the rain garden work  
Paving and Concrete: $113,660  
Landscaping and Irrigation: $34,174, includes plantings for the rain gardens
# Bioretention Cost Request Form

**City/County/Company Name:** Port of Anacortes  
**Contact Name:** Connie Thoman  
**Contact Email:** connie@portofanacortes.com  
**Contact Phone:** (360) 299-1818

## Project Information

- **Project Name:** O Avenue  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2010  
- **Total Project Cost:** $245,000 (total project cost)  
- **Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed):**  
Pervious paving and 4 rain gardens (850 sf total) with artistic watering can downspout connections

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square ft</td>
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## Estimated Cost for Installed Facility

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square ft</td>
<td>$34.12, 83.52</td>
<td>Low (rain gardens only), high (rain gardens &amp; artistic watering can downspouts)</td>
</tr>
<tr>
<td>Design</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

- Pervious paving - $174,000  
- Rain Gardens (4) – $29,000  
- Watering cans and downspouts (4) – $42,000.
### Project Information

- **City/County/Company Name:** City of Poulsbo
- **Contact Name:** Jim Groh
- **Contact Email:** jgroh@cityofpoulsbo.com
- **Contact Phone:** 360.779.4078

**Project Name:** Caldart Ave. Improvements Project  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2006  
**Total Project Cost:** Approx. $1 million  
**Funding Source (if Public Project):** $263,000 Department of Ecology LID Grant

**Brief Project Description (include number and types of BMPs installed):**

The purpose of the 2006 Caldart Ave. Improvements Project was to improve traffic and pedestrian safety on a 1/3 mile segment of Caldart Avenue in Poulsbo. Several LID elements were included in the project design - they consist of approximately 2,200 feet of new 5 feet wide porous concrete sidewalks, 800 feet of bioretention swales, and a traffic island bioretention cell. ACE Paving Co., of Bremerton, WA installed all of the LID elements including both the pervious concrete sidewalks and bioretention cells. $8,000 total for 2 bioretention swales.

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$5.00</td>
<td>Assumes 800 ft bioretention swale length, 2 ft bottom width</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

...
Bioretention Cost Request Form

City/County/Company Name: City of Puyallup
Contact Name: Joy Rodriguez
Contact Email: jrodriguez@ci.puyallup.wa.us
Contact Phone: 253-841-5549

Project Information
Project Name: Puyallup’s 2011 Rain Garden Program
Project Type (Public or Private): Public
Construction Date(s): 2011 (May, July, and Sept.)
Total Project Cost: $53,300
Funding Source (if Public Project): Department of Ecology Capacity Grant

Brief Project Description (include number and types of BMPs installed):
The 2011 Rain Garden Program included three installations with rain garden, rain barrel, and riparian planting elements. A total of 19 rain gardens, 8 rain barrels, and 1 riparian planting were installed during this project. The total project cost above includes all elements, design, landscape contractor (no-cost donation for 2 of the 3 installations), materials and related event items.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td>$0.89</td>
<td>Cost provided is per CF, however pricing is based on CY (industry std.)</td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td>$0.91</td>
<td>Cost provided is per CF, however pricing is based on CY (industry std.)</td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td>$0.74</td>
<td>Cost provided is per CF, however pricing is based on CY (industry std.)</td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td>$3.81</td>
<td>Cost determined by total project plant cost/total rain garden area</td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$0.74</td>
<td>Cost provided is per CF, however pricing is based on CY (industry std.)</td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$13.40</td>
<td>Includes materials, plants, landscape contractor</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$21.32</td>
<td>Includes design, specs, project mgt</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
**Bioretention Cost Request Form**

City/County/Company Name: City of Redmond  
Contact Name: Andy Rheaume  
Contact Email: AJRHEAUME@redmond.gov  
Contact Phone: 425-556-2741

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>185th Ave NE Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$747,168 (includes monitoring); $33,576 design cost; $513,301 construction and CM</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>$500,000 Department of Ecology LID grant</td>
</tr>
</tbody>
</table>

**Brief Project Description (include number and types of BMPs installed):**

Green stormwater infrastructure (570 feet long x 10 feet wide [top] bioretention swale and 6,840 square feet of porous concrete sidewalk) as part of the 185th Avenue NE Extension project.

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.19</td>
<td>Based on $5/CY</td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td>$1.11</td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td>$0.16</td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td>$1.69</td>
<td>Gravel backfill around underdrain</td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td>$1.00</td>
<td>Bark or wood chip mulch</td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>each</td>
<td>$9.75</td>
<td>165 installed for project</td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>each</td>
<td>$13.50, 215</td>
<td>Low cost (for 85 trees), high cost (for 21 trees)</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$1.35</td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td>$9.75</td>
<td>6- or 8-inch pipe</td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>each</td>
<td>$10</td>
<td>Average shrub cost (967 installed for project)</td>
</tr>
<tr>
<td>Check dam</td>
<td>each</td>
<td>$150</td>
<td>12 installed for project</td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$8.16</td>
<td>Approx. cost per SF, inc. excavation, plantings, soil, mulch, check dams</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$3</td>
<td>50% of design cost, assumes 10 foot width</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

- Bioretention soil = $36.50/CY
- Mulch = $27/CY
- Gravel backfill around underdrain = $46.50/CY
- Check dam = $150 each
- Geomembrane = $10/SY
# Bioretention Cost Request Form

**City/County/Company Name:** City of Redmond  
**Contact Name:** Andy Rheaume  
**Contact Email:** AJRHEAUME@redmond.gov  
**Contact Phone:** 425-556-2741

## Project Information

**Project Name:** SR202 and NE 124th St. Intersection  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2011  
**Total Project Cost:** $3M (all project components)  
**Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed):**

- 1,440 sq ft (430 ft x 8 ft) bioretention swale
- 3,770 sq ft (290 ft x 13 ft) compost-amended filter strips

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic ft</td>
<td>$1.13</td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square ft</td>
<td>$0.02</td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td>$7,500</td>
<td>Type 2 CB (48-inch diam) with flow splitter</td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic ft</td>
<td>$1</td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td>$12,000</td>
<td>Type 2 CB (48-inch diam) with control structure</td>
</tr>
<tr>
<td>Perennials</td>
<td>each</td>
<td>$1.60, 2.15, 6.35</td>
<td>Low, mid, high cost</td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>each</td>
<td>$2.95, 6.35, 9.55</td>
<td>Low, mid, high cost</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td>$22</td>
<td>6-inch pipe</td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>each</td>
<td>$6.35</td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square ft</td>
<td>$42.51</td>
<td>3,440 sq ft bioretention swale, inc. planting cost</td>
</tr>
<tr>
<td>Design</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**

- Bioretention swale = $35,260 ($82/LF, 430 LF total)  
- Mulch = $28/CY  
- Compost = $30.45/CY  
- Total planting cost (including mulch and compost) = $110,990
# Bioretention Cost Request Form

**City/County/Company Name:** Snohomish County  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** NA

## Project Information

**Project Name:** Silver Creek Basin LID Retrofits (Projects 6A and 7A)  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2010  
**Total Project Cost:** NA  
**Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed):**

- Project 6A = 2 rain gardens (approx. 305 sf each)
- Project 7A = 1 rain garden (approx. 830 sf)
- Costs from engineer's construction cost estimate (100% design)

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$1.48</td>
<td>Structure excavation Class B, does not inc. haul and disposal</td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td>$0.90</td>
<td>30 mil, black PVC liner; includes installation</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td>$1.85</td>
<td>Mineral aggregate, Type 26</td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td>$1.85</td>
<td>Bark mulch</td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$2.03</td>
<td>Bioretention soil</td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td>$3.73, 5.40</td>
<td>Low (Project 7A) to high cost (Project 6A), includes all plantings</td>
</tr>
<tr>
<td>Observation Well</td>
<td>each</td>
<td>$200</td>
<td>Material price quote from HD Fowler, inc. 30% labor</td>
</tr>
<tr>
<td>Streambed Cobbles</td>
<td>cubic feet</td>
<td>$7.41</td>
<td>4&quot; streambed cobbles</td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$36, 49</td>
<td>Low (Project 7A) to high cost (Project 6A)</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

- Bioretention soil = $55/CY
- Bark mulch = $60/CY
- Mineral aggregate, Type 26 = $50/CY
- Streambed cobbles = $200/CY
- Excavation (Structure, Class B) = $40/CY
- Planting costs = $3,300 (Project 6A), $3,100 (Project 7A)
### Project Information

- **Project Name:** Ballard Roadside Rain Gardens
- **Project Type (Public or Private):** Public
- **Construction Date(s):** 2009
- **Total Project Cost:** $1.8 million
- **Funding Source (if Public Project):** Partial Federal Recovery Act funding

#### Brief Project Description (include number and types of BMPs installed):

Approx. 32,994 sf of rain gardens installed

Costs based on bid tabs and plan sheets posted on project website:


### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td>$1.53</td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.76</td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td>$1.67</td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>each</td>
<td>$85, 100</td>
<td>Low (coniferous), high (deciduous)</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$1.36, 1.48</td>
<td>Low (landscape mix), high (turf mix)</td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td>$7</td>
<td>1,371 shrubs total</td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>each</td>
<td>$3, 7</td>
<td>Low (4&quot; pot), high (1 gallon)</td>
</tr>
<tr>
<td>Emergents</td>
<td>each</td>
<td>$2.45</td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$44</td>
<td>Construction cost</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

- Excavation = $20.65/CY
- Bioretention Soil = $36.80/CY (landscape mix) - $40/CY (turf mix)
- Compost = $41.25/CY
- Mulch = $45/CY
- $44/SF cost from Life-cycle cost of Green Stormwater Infrastructure for the CSO LTCP
Bioretention Cost Request Form

City/County/Company Name: Seattle Public Utilities
Contact Name: NA
Contact Email: NA
Contact Phone: NA

Project Information

Project Name: Broadview Green Grid
Project Type (Public or Private): Public
Construction Date(s): 2004 (Construction cost)
Total Project Cost: $4.6 million
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed):
15 block area = approx. $280,000 per block (330 LF)
Both 'SEA Street' and 'Cascade' types
One sidewalk per block

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$42.42</td>
<td>Assumes 20 ft width x 330 LF per block x 15 blocks</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

Construction Cost Source: Pinehurst Natural Drainage System Project, Drainage Fund – Flood Control and Local Drainage
Bioretention Cost Request Form

City/County/Company Name: Seattle Public Utilities
Contact Name: Emiko Takahashi
Contact Email: emiko.takahashi@seattle.gov
Contact Phone: (206) 615-1695

Project Information

Project Name: High Point
Project Type (Public or Private): Public
Construction Date(s): 2010
Total Project Cost: NA
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed):

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
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Estimated Cost for Installed Facility

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<th>Item</th>
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<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td>$0.65</td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

Source: O&M costs from 2010 report (Stage Gate-2 for Venema Natural Drainage System)
# Bioretention Cost Request Form

- **City/County/Company Name:** Seattle Public Utilities
- **Contact Name:** Tracy Tackett
- **Contact Email:** Tracy.Tackett@seattle.gov
- **Contact Phone:** (206) 386-0023

## Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Pinehurst Green Grid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2005 (Construction cost), 2010 (O&amp;M cost)</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$4.6 million</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Brief Project Description (include number and types of BMPs installed):**

660 LF x 20 feet wide bioretention swales

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td>$0.52</td>
<td>Common excavation</td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td>$0.81</td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.22</td>
<td>Sodding</td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td>$1.00</td>
<td>Quarry spills, assumes 1.3 TN/CY</td>
</tr>
<tr>
<td>Grading/Finishing</td>
<td>square feet</td>
<td>$2.41</td>
<td>Inlet Type 250A</td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td>$1.11</td>
<td>Shredded bark mulch</td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td>$1.10</td>
<td>CB Type 240 A &amp; B</td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td>$2.20</td>
<td>Perennials</td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td>$1.74</td>
<td>Square feet</td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>cubic feet</td>
<td>$1.11</td>
<td>Average cost per SF for trees and shrubs</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$1.00</td>
<td>Bioretention soil</td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td>$2.41</td>
<td>Quarry spills, assumes 1.3 TN/CY</td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td>$1.90</td>
<td>Low (does not incl. paving), high (incl. paving), based on 13,200 sf, inc. drainage and landscaping</td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$11.77, 23.29</td>
<td>Low</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$2.20, 2.60</td>
<td>Low, average, high costs for O&amp;M by SCC</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td>$1.90</td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

- **Excavation (common) = $22/CY**
- **Bioretention soil = $30/CY**
- **Compost material = $14/CY**
- **Shredded bark mulch = $30/CY**
- **Shredded cobbles = $75/TN**
- **Quarry spalls = $50/TN**

O&M Source: Life cycle cost of Green Stormwater Infrastructure for the CSO LTCP

From 2006 to 2009, the three years after completion of Pinehurst, Seattle Conservation Corp (SCC) was contracted to water, weed, replace plants and mulch sixteen blocks of NDS. The three years of maintenance for the 70,000 square feet of landscaped area at Pinehurst averaged $2.20/square foot. The annual average costs ranged from $1.90 to $2.60 per square foot.
# Bioretention Cost Request Form

<table>
<thead>
<tr>
<th>City/County/Company Name:</th>
<th>Seattle Public Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name:</td>
<td>Emiko Takahashi</td>
</tr>
<tr>
<td>Contact Email:</td>
<td><a href="mailto:emiko.takahashi@seattle.gov">emiko.takahashi@seattle.gov</a></td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>(206) 615-1695</td>
</tr>
</tbody>
</table>

## Project Information

- **Project Name:** Rainwise
- **Project Type (Public or Private):** Private
- **Construction Date(s):** 2010
- **Total Project Cost:** NA
- **Funding Source (if Public Project):** Public (incentives for private installations)

**Brief Project Description (include number and types of BMPs installed):**

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$4.00</td>
<td>Construction incentive (per SF mitigated)</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$1.40</td>
<td>Per SF mitigated; inc. public outreach, inspections, trainings</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

Source: Life-cycle cost of Green Stormwater Infrastructure for the CSO LTCP

Bioretention cost listed above does not include:
- Soft cost ($1.40/sf) for SPU to coordinate public outreach, inspections, acquires funding for the incentives, reports on program progress and conducts contractor trainings
- Replacement cost (2% or $3.41/sf)
- O&M to be performed by homeowner (periodic replanting, mulching, weeding and watering)
# Bioretention Cost Request Form

**City/County/Company Name:** Seattle Public Utilities  
**Contact Name:** Emiko Takahashi  
**Contact Email:** emiko.takahashi@seattle.gov  
**Contact Phone:** (206) 615-1695

## Project Information

| Project Name: | Rainwise - Roadside Rain Gardens  
| Project Type (Public or Private): | Private  
| Construction Date(s): | 2010  
| Total Project Cost: | NA  
| Funding Source (if Public Project): | Public (incentives for private installations)  

## Brief Project Description (include number and types of BMPs installed):

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
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</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
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<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
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</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
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## Estimated Cost for Installed Facility

<table>
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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$58.30</td>
<td>Construction cost</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$52.47</td>
<td>Soft costs (design, PM, CM, closeout) are 90% of const. costs</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td>$0.18, 0.32, 0.45</td>
<td>Low, average, high O&amp;M costs</td>
</tr>
</tbody>
</table>

## Additional Notes or Information

Source: Life-cycle cost of Green Stormwater Infrastructure for the CSO LTCP  
- Construction cost ($3.50/sf mitigated, $58.30/sf bioretention)  
- Soft cost ($3.15/sf mitigated, $52.47/sf bioretention) for design, project and construction management, and closeout costs  
- Replacement cost ($0.10/sf)
Bioretention Cost Request Form

City/County/Company Name: Seattle Public Utilities  
Contact Name: NA  
Contact Email: NA  
Contact Phone: NA

Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>High Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2000</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$850,000</td>
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<tr>
<td>Funding Source (if Public Project):</td>
<td>NA</td>
</tr>
</tbody>
</table>

Brief Project Description (include number and types of BMPs installed):
Seattle's pilot Street Edge Alternatives Project (SEA Streets). Reduced impervious surfaces to 11 percent less than a traditional street, provided surface detention in swales, and added over 100 evergreen trees and 1100 shrubs. This included an extensive design and communications budget due to the need to work closely with residents on the design. Future projects will cost less than traditional street.

www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/GreenStormwaterInfrastructure/NaturalDrainageProjects/StreetEdgeAlternatives

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$49.24</td>
<td>Higher cost (pilot project), based on $325,000 per block, 20 ft wide swale</td>
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<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
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</table>

Additional Notes or Information
# Bioretention Cost Request Form

**City/County/Company Name:** Thurston County  
**Contact Name:** Scott Lindblom  
**Contact Email:** LINDBLS@co.thurston.wa.us  
**Contact Phone:** 360-786-5133

## Project Information

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Evergreen Terrace - Phase III</th>
</tr>
</thead>
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<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2010</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$194,095 (Phase III)</td>
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<tr>
<td>Funding Source (if Public Project):</td>
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**Brief Project Description (include number and types of BMPs installed):**

This project constructed 6 bioretention swales along 9th Ave and Torrey Street. Includes 18” of amended soil in each swale.

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Backfilling</td>
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</tr>
<tr>
<td>Compost</td>
<td>cubic feet</td>
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<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.30</td>
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<td>square feet</td>
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<td></td>
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<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td>$0.07</td>
<td>Seedling, fertilizing, and mulching</td>
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<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td>$0.52</td>
<td>Bedding around underdrain pipe</td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td>$650</td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
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<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td>$650</td>
<td>Type I CB with overflow</td>
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<td>Perennials</td>
<td>square feet</td>
<td></td>
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<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
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<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$0.89</td>
<td>Soil amendment</td>
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<tr>
<td>Underdrain Pipe (if used)</td>
<td>feet</td>
<td>$6.55</td>
<td>Assumes 9000 sf of swales, does not inc. traffic control, paving, or piping</td>
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<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
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<td></td>
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<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td>$1.11</td>
<td>Quarry spalls</td>
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## Estimated Cost for Installed Facility

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<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Bioretention</td>
<td>square feet</td>
<td>$6.55</td>
<td>Assumes 9000 sf of swales, does not inc. traffic control, paving, or piping</td>
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<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
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<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
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</tbody>
</table>

## Additional Notes or Information

- Excavation = $8/CY
- Quarry Spalls = $30/CY
- Gravel backfill around underdrain pipe = $14/CY
Buffer Strips
**Vegetated (Buffer) Strip Cost Request Form**

City/County/Company Name: City of Redmond  
Contact Name: Andy Rheaume  
Contact Email: AJRHEAUME@redmond.gov  
Contact Phone: 425-556-2741  

### Project Information

**Project Name:** SR202 and NE 124th St. Intersection  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2011  
**Total Project Cost:** $3M (all project components)  
**Funding Source (if Public Project):** NA  

**Brief Project Description (include number and types of BMPs installed):**

- 3,440 sf (430 ft x 8 ft) bioretention swale
- 3,770 sf (290 ft x 13 ft) compost-amended filter strips

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compost (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
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</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetated Buffer Strip</td>
<td>square feet</td>
<td>$1.35</td>
<td>3,770 sf CAVFS</td>
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<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
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<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
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<td></td>
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</table>

### Additional Notes or Information

Compost-amended filter strips = $5,075 ($17.50/LF, 290 LF)
# Vegetated (Buffer) Strip Cost Request Form

**City/County/Company Name:** WSDOT  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** NA

## Project Information

**Project Name:** SR 18 Maple Valley to Issaquah Hobart Road  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2003  
**Total Project Cost:** $8,170,000 (stormwater treatment component of SR-18 project)  
**Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed):**
Filter strips with engineered soil (79,020 SF)

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compost (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
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## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetated Buffer Strip</td>
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<td>79,020 SF</td>
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<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information
Cisterns
Berg Vault Company of WA, Inc.
Post Office Box 1205
Mount Vernon, WA 98273
360-424-4999 Fax 360-424-5839

<table>
<thead>
<tr>
<th>QUOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
</tr>
<tr>
<td>QUOTE #</td>
</tr>
</tbody>
</table>

**Quote For**
Cash Sale-Taxable
Herrera, Inc.

**Job Site**
Rebecca Dugopolski
rdugopoliski@herrerainc.com

<table>
<thead>
<tr>
<th>Quote Provided By</th>
<th>Terms</th>
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</thead>
<tbody>
<tr>
<td>Peggy</td>
<td>COD</td>
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<table>
<thead>
<tr>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>PRICE EACH</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td></td>
<td>BELOW GROUND ONLY</td>
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</tr>
<tr>
<td>1</td>
<td>325 Gallon Round Potable Cistern - Below Ground Only - White Plastic, Part# 41321</td>
<td>500.00</td>
<td>500.00</td>
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<tr>
<td>1</td>
<td>550 Gallon Round Potable Cistern - Below Ground Only - White Plastic, Part# 40856</td>
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<tr>
<td>1</td>
<td>600 Gallon Potable Cistern - Below Ground Only - White Plastic, Part# 41328</td>
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<td>1</td>
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<td></td>
<td>ABOVE GROUND ONLY</td>
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<td></td>
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<tr>
<td>1</td>
<td>305 Gallon Potable Water Tank - Green Plastic, Part# 40863</td>
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<td>500 Gallon Potable Water Tank - GREEN, Part# 43105</td>
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<tr>
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<td>550 Gallon Potable Water Tank - Green Plastic, Part# 40864</td>
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Thank you for the opportunity to provide a quote. Please review for accuracy. Materials quote good for 30 days.

Subtotal $12,970.00
Sales Tax (8.2%) $1,063.54
Total $14,033.54
### BH CORRUGATED RANCH TANK PRICES

Prices Effective July 1, 2011

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<th>Capacity</th>
<th>Useable Gallons Full</th>
<th>Useable Gallons with 6&quot; Freeboard</th>
<th>Diameter Ft. - In.</th>
<th>Height Dec. Ft.</th>
<th>MATERIALS ONLY (Galvanized sidewalls and roof with Aqualiner)</th>
<th>INSTALLED PRICE (Excluding freight, accessories, foundation engineering, permits)</th>
<th>MATERIALS ONLY (Factory coated sidewalls and roof with Aqualiner)</th>
<th>INSTALLED PRICE (Excluding freight, accessories, foundation engineering, permits)</th>
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<td>72300</td>
<td>68262</td>
<td>37.27</td>
<td>5.98</td>
<td>$24,567</td>
<td>$29,381</td>
<td>$25,832</td>
<td>$30,645</td>
<td>$35,006</td>
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<tr>
<td>54600</td>
<td>50109</td>
<td>39.47</td>
<td>5.98</td>
<td>$20,717</td>
<td>$25,298</td>
<td>$21,610</td>
<td>$28,190</td>
<td>$32,155</td>
</tr>
<tr>
<td>81100</td>
<td>76551</td>
<td>39.47</td>
<td>5.98</td>
<td>$25,605</td>
<td>$30,816</td>
<td>$26,944</td>
<td>$32,155</td>
<td>$37,006</td>
</tr>
</tbody>
</table>

Prices are quoted FOB Madera, CA and do not include freight, accessories, taxes or other fees. Prices subject to change without notification.
# Cistern Cost Request Form

**City/County/Company Name:** Aquabarrel Cisterns  
**Contact Name:** NA  
**Contact Email:** orders@Aquabarrel.com  
**Contact Phone:** 301-253-8855

## Project Information

**Project Name:** Complete Cistern  
**Project Type (Public or Private):**  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**

## Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):

Complete Cistern (214-gallon polyethylene) includes Submersible Pump, Downspout Debris Filter, Downspout to Tank Flex-Hose, Spigot, Access Cover, Drain Plug, and Overflow Port

66" long x 22" wide x 45" high

---

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$1,001</td>
<td>214 gallons</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downspout Filter</td>
<td>per unit</td>
<td></td>
<td>Included with unit</td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$35</td>
<td>214 gallons</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

214 gallon (29 cubic feet) = $1001 ($35/cf)
### Project Information

**Project Name:** Fat Boy Water Wall  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**  

**Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):**  
Fat Boy Water Wall (650-gallon polyethylene) includes 12" inlet screen and 3" overflow outlet  
28" deep x 6'7" tall x 7'6" long

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$1,390</td>
<td>650 gallons</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downspout Filter</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$16</td>
<td>650 gallons</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

650 gallon (87 cf) = $1390 ($16/cf)
Cistern Cost Request Form

City/County/Company Name: Aquabarel Cisterns
Contact Name: NA
Contact Email: orders@Aquabarel.com
Contact Phone: 301-253-8855

**Project Information**

Project Name: Rainwater Pillow
Project Type (Public or Private): 2011
Construction Date(s):
Total Project Cost:
Funding Source (if Public Project):

**Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):**
Rainwater Pillow (1000, 2000, or 3000-gallon reinforced polymer alloy) includes 2 filters (9" x 9"), .5 horse power pump, remote control, and fittings and hoses

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$2539, 3476, 4411</td>
<td>Low (1,000 gal.), mid (2,000 gal.), high (3,000 gal.)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downspout Filter</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Estimated Cost for Installed Facility**

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$11, 13, 19</td>
<td>Low (3,000 gal.), mid (2,000 gal.), high (1,000 gal.)</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**

1000 gallon (134 cf) = $2539 ($19/cf)
2000 gallon (267 cf) = $3476 ($13/cf)
3000 gallon (401 cf) = $4411 ($11/cf)
# Cistern Cost Request Form

**City/County/Company Name:** Berg Vault  
**Contact Name:** Peggy  
**Contact Email:** peggy@bergvaultinc.com  
**Contact Phone:** 360-424-4999

**Project Information**
- **Project Name:** Aboveground Cisterns  
- **Project Type (Public or Private):** Aboveground Cisterns  
- **Construction Date(s):** 2011  
- **Total Project Cost:**  
- **Funding Source (if Public Project):**

**Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):**
- Plastic Aboveground Cisterns

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$285, 721, 3342</td>
<td>Low (305 gal.), mid (1350 gal.), high (5,000 gal.), tax not included</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$3, 4, 7</td>
<td>Low (1550-3000 gal), mid (1100-3500 gal), high (305 gal)</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

- 305 gallon - $285 ($7/CF)  
- 500 gallon - $401 ($6/CF)  
- 550 gallon - $441 ($6/CF)  
- 1100 gallon - $588 ($4/CF)  
- 1350 gallon - $721 ($4/CF)  
- 1550 gallon - $623 ($3/CF)  
- 2500 gallon - $1003 ($3/CF)  
- 3000 gallon - $1203 ($3/CF)  
- 5000 gallon - $3342 ($5/CF)
Cistern Cost Request Form

City/County/Company Name: Berg Vault
Contact Name: Peggy
Contact Email: peggy@bergvaulinc.com
Contact Phone: 360-424-4999

Project Information

Project Name: Belowground Cisterns
Project Type (Public or Private):
Construction Date(s):
Total Project Cost:
Funding Source (if Public Project):

Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):

Plastic Belowground Cisterns

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$521, 735, 1591</td>
<td>Low (325 gal.), mid (550-600 gal.), high (1,700 gal.), tax not included</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$7, 10, 12</td>
<td>Low (1,700 gal.), mid (550 gal.), high (325 gal.)</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

325 gallon - $521 ($12/CF)
550 gallon - $735 ($10/CF)
600 gallon - $722 ($9/CF)
1200 gallon - $1,123 ($7/CF)
1700 gallon - $1,591 ($7/CF)
**Cistern Cost Request Form**

**City/County/Company Name:** BH Tank  
**Contact Name:** Gerrick Burton  
**Contact Email:** gerrick@bhtank.com  
**Contact Phone:** (559) 662-0600

### Project Information

**Project Name:** Highline Tank (Colorbond)  
**Project Type (Public or Private):**  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**

**Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):**
- Corrugated steel aboveground tanks  
- Colorbond = factory coated sidewalls and roof with Aqualiner  
- Installed price = excludes freight, accessories, foundation, engineering, and permits

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$3128, 11697, 27104</td>
<td>Low (2,600 gal), mid (25,000 gal), high (81,000 gal), materials only price</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$2.50, 3.5, 9</td>
<td>Low (81,000 gal), mid, high (2,600 gal)</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

- 2,600 gallons - $3,128 (Colorbond, materials only, $9/CF), $3,886 (Colorbond, installed price)  
- 25,000 gallons - $11,697 (Colorbond, materials only, $3.50/CF), $14,008 (Colorbond, installed price)  
- 81,100 gallons - $27,304 (Colorbond, materials only, $2.50/CF), $32,155 (Colorbond, installed price)

Vendor also has a range of sizes available between 2,600 and 81,100 gallons
# Cistern Cost Request Form

**City/County/Company Name:** BH Tank, Highline Tank  
**Contact Name:** Gerrick Burton  
**Contact Email:** gerrick@bhtank.com  
**Contact Phone:** (559) 662-0600

## Project Information

**Project Name:** Highline Tank (Zincalum)  
**Project Type (Public or Private):**  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**

Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):

- Corrugated steel aboveground tanks
- Zincalum = galvanized sidewalls and roof with Aqualiner
- Colorbond = factory coated sidewalls and roof with Aqualiner
- Installed price = excludes freight, accessories, foundation, engineering, and permits

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$3,128, 10026, 21683</td>
<td>Low (2,600 gal), mid (25,000 gal), high (81,000 gal), materials only price</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$2, 6, 9</td>
<td>Low (81,000 gal), mid, high (2,600 gal)</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

- 2,600 gallons: $3,128 (Zincalum, materials only, $8/CF), $3,687 (Zincalum, installed price)  
- 25,000 gallons: $10,026 (Zincalum, materials only, $3/CF), $13,264 (Zincalum, installed price)  
- 81,100 gallons: $21,683 (Zincalum, materials only, $2/CF), $30,816 (Zincalum, installed price)  

Vendor also has a range of sizes available between 2,600 and 81,100 gallons
Cistern Cost Request Form

City/County/Company Name: Rain Tank Depot
Contact Name: NA
Contact Email: info@tank-depot.com
Contact Phone: 866-926-5603

Project Information
Project Name: Aquadra Modular Cisterns
Project Type (Public or Private): Public
Construction Date(s): 2011
Total Project Cost: NA
Funding Source (if Public Project): NA

Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):
Aquadra Modular Cistern (75-gallon plastic tank) comes with a kit to mount the unit to your house and a hose adapter. The mounting kit allows you to bolt and secure the tank to the side of the house with two securing bolts.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$301</td>
<td>75 gallons</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$30</td>
<td>75 gallons</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
Aquadra Modular Cistern (75-gallon) - $301 ($30/CF)
# Cistern Cost Request Form

**City/County/Company Name:** Rain Tank Depot  
**Contact Name:** NA  
**Contact Email:** info@tank-depot.com  
**Contact Phone:** 866-926-5603

## Project Information
- **Project Name:** Contain Rainwater Harvesting Wall  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2011  
- **Total Project Cost:**  
- **Funding Source (if Public Project):**

## Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):
Contain Rainwater Harvesting Wall (71 gallon plastic tank) includes mounting brackets, tap assembly, and connector module.

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$180.34</td>
<td>71 gallons</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$19</td>
<td>See notes</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

Contain Rainwater Harvesting Wall (71-gallon) - $180.34 ($19/CF)
### Cistern Cost Request Form

**City/County/Company Name:** Rain Tank Depot  
**Contact Name:** NA  
**Contact Email:** info@tank-depot.com  
**Contact Phone:** 866-926-5603

---

### Project Information

**Project Name:** Plastic Cisterns  
**Project Type (Public or Private):**  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**

**Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):**

---

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$57, 642, 8355</td>
<td>Low (25 gal.), mid (1200 gal.), high (12,500 gal.)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downspout Filter</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Estimated Cost for Installed Facility

<table>
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<tr>
<th>Item</th>
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<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$4, 11, 17</td>
<td>Low (1200 gal.), mid, high (25 gal.)</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Additional Notes or Information

Ace / DenHartog 25 Gallon Vertical NSF-61 Tank - $57 ($17/CF)  
1200 Gallon Snyder Vertical Water Storage Tank - $642 ($4/CF)  
Ace / DenHartog 12500 Gallon Vertical NSF-61 Tank - $8355 ($5/CF)  

Vendor also sells various sizes inbetween 25 and 12,500 gallons.
**Cistern Cost Request Form**

City/County/Company Name: Rain Tank Depot  
Contact Name: NA  
Contact Email: info@tank-depot.com  
Contact Phone: 866-926-5603

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Plastic Underground Cisterns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td></td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td></td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td></td>
</tr>
</tbody>
</table>

Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$434, 1380, 4251</td>
<td>Low (325 gal.), mid (1200 gal.), high (2650 gal.)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downspout Filter</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$8.60, 10, 12</td>
<td>Low (1200 gal.), mid (325 gal.), high (2650 gal.)</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

- Ace Roto Mold 325 Gallon Cistern Tank - $434 ($10/CF)  
- Snyder 1200 Gallon Below Ground Cistern - $1380 ($8.60/CF)  
- Graf 2650 Gallon Carat XL Rainwater Retention Cistern - $4251 ($12/CF)

Vendor also sells various sizes in between 300 and 2,650 gallons.
Cistern Cost Request Form

**City/County/Company Name:** Rain Tank Depot  
**Contact Name:** NA  
**Contact Email:** info@tank-depot.com  
**Contact Phone:** 866-926-5603

**Project Information**
- **Project Name:** Rainwater HOG Modular Cisterns  
- **Construction Date(s):** 2011  
- **Total Project Cost:**  
- **Funding Source (if Public Project):**

**Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):**
Rainwater HOG (50-gallon plastic tank) is supplied with a connector kit to join up further units and an air vent for the top of each tank.

Rainwater HOG Accessories Inlet Outlet Kit Components per Kit: meshed inlet screen and plastic outlet ball valve.

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$301</td>
<td>50 gallons</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td>$19</td>
<td>Rain Water Hog Inlet/Outlet Kit</td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$45</td>
<td>50 gallons</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**

Rainwater HOG (50-gallon) - $301 ($45/CF)
# Cistern Cost Request Form

**City/County/Company Name:** Rain Tank Depot  
**Contact Name:** NA  
**Contact Email:** info@tank-depot.com  
**Contact Phone:** 866-926-5603

## Project Information

**Project Name:** Water Wall  
**Project Type (Public or Private):**  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**

## Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):

650 Gallon Waterwall Fatboy Rainwater Collection Tank  
Inlet: A 12" mosquito proof leaf strainer supplied with the tank can be placed in any of three inlet positions on the top.  
Overflow: A 3" flanged overflow outlet is provided, including rubber seal and screws for installing. There are overflow positions on either end of the tank.  
Outlets: Two brass threaded 1" tap outlets - one in each end and one low on the front of the tank - plus one 3/4" tap outlet at knee height on the front of the tank.  
Footing: A level, solid base is all that is required for Waterwall Fatboy such as cement pavers or a contained sand base.  
Material: High density polyethylene, UV stabilised, FEA approved for holding potable water

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td>$1,100</td>
<td>650 gallons</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downspout Filter</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
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</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>cubic feet</td>
<td>$13</td>
<td>650 gallons</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information
Cistern Cost Request Form

City/County/Company Name: Seattle Public Utilities
Contact Name: Emiko Takahashi
Contact Email: emiko.takahashi@seattle.gov
Contact Phone: (206) 615-1695

Project Information

Project Name: Rainwise
Project Type (Public or Private): Private
Construction Date(s): 2010
Total Project Cost: NA
Funding Source (if Public Project): Public (incentives for private installations)

Brief Project Description (include number of cisterns, storage volume, and material [fiberglass, polyethylene, etc.]):

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screen</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Treatment System</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cistern</td>
<td>square feet</td>
<td>$2.60</td>
<td>Construction incentive cost per SF, inc. O&amp;M</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

Source: Life-cycle cost of Green Stormwater Infrastructure for the CSO LTCP

Cistern cost above does not include:
- Soft cost ($1.51/sf) for SPU to coordinate public outreach, inspections, acquires funding for the incentives, reports on program progress and conducts contractor trainings
- Replacement cost (2% or $5.39/sf)

Cistern cost does include:
- O&M performed by the homeowner. The incentive includes the present value cost of future maintenance done by residents. Cisterns will require periodic inspections and filter cleanings during the rainy months.
Constructed Wetlands
**City/County/Company Name:** City of Arlington  
**Contact Name:** Eric Scott  
**Contact Email:** EScott@arlingtonwa.gov  
**Contact Phone:** 360-403-3512

---

**Project Information**

**Project Name:** Arlington Constructed Stormwater Wetland  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2011  
**Total Project Cost:** $649,881 (estimated based on grant + 25% match)  
**Funding Source (if Public Project):** $519,905 Department of Ecology stormwater grant

**Brief Project Description (include number and types of BMPs installed):**

8.7 acre wetland project had a bid price of $770,000.

The City’s largest stormwater outfall, draining 284 acres of Old Town Arlington, discharges into the Stillaguamish River. The constructed stormwater wetland will provide a natural treatment system to capture and remove nutrients and provide flood detention and storage capacity.

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructed Wetland</td>
<td>square feet</td>
<td>$2.03</td>
<td>8.7-acre wetland</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Additional Notes or Information**
**City/County/Company Name:** City of Bellingham  
**Contact Name:** William M. Reilly  
**Contact Email:** wreilly@cob.org  
**Contact Phone:** 360-778-7955

---

**Project Information**

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Brentwood Rock Plant Filter Retrofit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2010 (June - September)</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$155,749</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>SSWU</td>
</tr>
</tbody>
</table>

**Brief Project Description (include number and types of BMPs installed):**

Existing wet pond reconstructed into a rock plant filter (closest relation constructed wetland). Cost fairly indicative of new construction except no property cost. Rock Plant Filter is typically a design used in tertiary treatment for wastewater. Being used as a phosphorus limiting BMP.

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td>$1.71</td>
<td>Lump sum plantings $28,200</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructed Wetland</td>
<td>square feet</td>
<td>$9.42</td>
<td>16,500 sf rock plant filter</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$1.30</td>
<td>$21,433 total, 16,500 sf rock plant filter</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**

Lump sum for items makes discrimination difficult.
**Constructed Wetland Cost Request Form**

**City/County/Company Name:** City of Bellingham  
**Contact Name:** William M. Reilly  
**Contact Email:** wreil1y@cob.org  
**Contact Phone:** 360-778-7955

---

**Project Information**

**Project Name:** Eliza Avenue Improvements, ES-0126  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2007  
**Total Project Cost:** $133,977 (Constructed wetland costs only)  
**Funding Source (if Public Project):** SSWU

**Brief Project Description (include number and types of BMPs installed):**

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials</td>
<td>square feet</td>
<td>$1.29</td>
<td>Lump sum $20,000 vegetation</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructed Wetland</td>
<td>square feet</td>
<td>$8.62</td>
<td>15,533 sf</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$2.78</td>
<td>$43,200 total, 15,533 sf</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Additional Notes or Information**
**City/County/Company Name:** City of Redmond  
**Contact Name:** Andy Rheaume  
**Contact Email:** AJRHEAUME@redmond.gov  
**Contact Phone:** 425-556-2741

---

**Project Information**

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Bear Creek Park WQ Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$442,127</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Brief Project Description (include number and types of BMPs installed):**

This project includes construction of a stormwater wetland (4,400 sf) and associated piping and planting; construction of a concrete block retaining wall; stream buffer mitigation; tree replacement, installation of short soft-surface interpretative trail; and replacement of asphalt pedestrian/biking trail with porous pavement (7,800 sf).

---

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.74</td>
<td>Pond excavation</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td>$2,180</td>
<td>Catch basin, Type 2 54&quot; diameter</td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td>$7,025</td>
<td>Rectangular vault (5'4&quot; x 9'4&quot; x 4'8&quot;)</td>
</tr>
<tr>
<td>Perennials</td>
<td>each</td>
<td>$2.75</td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$0.55</td>
<td>Topsoil, Type A</td>
</tr>
<tr>
<td>Seal</td>
<td>square feet</td>
<td>$1.37</td>
<td>Geosynthetic clay liner and penetration</td>
</tr>
<tr>
<td>Woody Shrubs</td>
<td>each</td>
<td>$9, 14</td>
<td>Low, high cost</td>
</tr>
<tr>
<td>Small Trees</td>
<td>each</td>
<td>$28, 100</td>
<td>Low, mid, high costs</td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructed Wetland</td>
<td>square feet</td>
<td>$12.47</td>
<td>4,400 sf wetland, inc. excavation, inlet/outlet structures, plantings, liner</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

Pond excavation = $19.90/CY  
Topsoil, Type A = $14.75/CY  
2 inlet structures and 2 outlet structures used for wetland  
Total planting cost = $16,922
Grassed Swales
Grassed (Vegetated) Swale Cost Request Form

City/County/Company Name: WSDOT
Contact Name: Mark Maurer
Contact Email: MaurerM@wsdot.wa.gov
Contact Phone: (360) 705-7260

Project Information

Project Name: SR 518 Compost-Amended Biofiltration Swale
Project Type (Public or Private): Public
Construction Date(s): 2008
Total Project Cost: $30,000 (2 bioswales, inc. components to facilitate monitoring that are not inc. in cost/SF)
Funding Source (if Public Project):

Brief Project Description (include number and types of BMPs installed):

- 100-foot long compost-amended biofiltration swale = approximately $2,800 ($4.30 per square foot)
- The costs for the SR 518 site included:
  - Layout, removing asphalt lined ditch, reshaping ditch, earthwork (a small excavator with a blade was used and cut and fill were balanced), fine grading (small hand tool work), compost blanket, inlet pipe (trenching, curb cuts and concrete work at inlet, pipe costs, pipe placement and cover, and splash protection at pipe outlet), hydroseeding (including seed and mulch)
  - No outlet catch basin or piping was installed since there was already a catch basin located downstream of the biofiltration swales.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grassed Swale</td>
<td>square feet</td>
<td>$4.30</td>
<td>Compost-amended bioswale</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
**Grassed (Vegetated) Swale Cost Request Form**

City/County/Company Name: WSDOT  
Contact Name: Mark Maurer  
Contact Email: MaurerM@wsdot.wa.gov  
Contact Phone: (360) 705-7260

---

**Project Information**

Project Name: SR 518 Control Biofiltration Swale  
Project Type (Public or Private): Public  
Construction Date(s): 2008  
Total Project Cost: $30,000 (2 bioswales, inc. components to facilitate monitoring that are not inc. in cost/SF)  
Funding Source (if Public Project):

---

**Brief Project Description (include number and types of BMPs installed):**

100-foot long standard biofiltration swale = approximately $2,500 ($3.80 per square foot).

The costs for the SR 518 site included:

- Layout, removing asphalt lined ditch, reshaping ditch, earthwork (a small excavator with a blade was used and cut and fill were balanced), fine grading (small hand tool work), inlet pipe (trenching, curb cuts and concrete work at inlet, pipe costs, pipe placement and cover, and splash protection at pipe outlet), hydroseeding (including seed, fertilizer, and mulch)

- No outlet catch basin or piping was installed since there was already a catch basin located downstream of the biofiltration swales.

---

**Estimated Costs per Facility Component**

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<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
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<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td></td>
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</tr>
</tbody>
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**Estimated Cost for Installed Facility**

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grassed Swale</td>
<td>square feet</td>
<td>$3.80</td>
<td>Standard bioswale</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Additional Notes or Information**
City/County/Company Name: City of Mount Vernon
Contact Name: Blaine Chesterfield
Contact Email: blainec@mountvernonwa.gov
Contact Phone: 360-336-6204

---

**Project Information**

Project Name: Freeway Drive Improvements Phase II
Project Type (Public or Private): Public
Construction Date(s): July - August 2011
Total Project Cost: $900,000
Funding Source (if Public Project): City and Transportation Improvement Board

---

**Brief Project Description (include number and types of BMPs installed):**
To improve Freeway Drive from College way to Steward Road and to add sidewalks in some areas. This included grass lined rain gardens that would be able to treat the water quality event.

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>0.29</td>
<td>$7.95 per CY including haul</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td>NA</td>
<td>Not noted in the bid items</td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td>0.84</td>
<td>$7.60 per SY</td>
</tr>
<tr>
<td>Inlet Structure (if used)</td>
<td>per unit</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Outlet Structure (if used)</td>
<td>per unit</td>
<td>2210</td>
<td>Catch Basin Type 2, 48-inch</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>LF</td>
<td>29.7</td>
<td>Underdrain pipe 12-inch diameter</td>
</tr>
</tbody>
</table>

---

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Grass Lined Rain Garden</td>
<td>square feet</td>
<td>9.1</td>
<td>$4,550 for entire facility</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>4.66</td>
<td>Very rough estimate</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td>0.47</td>
<td>Estimated on mowing (0.07) &amp; Vactor (0.40)</td>
</tr>
</tbody>
</table>

---

**Additional Notes or Information**


Green Roofs
## Green Roof Cost Request Form

**City/County/Company Name:** Private Owner  
**Contact Name:** Seattle Green Roof Inventory  
**Contact Email:** Joel.Banslaben@seattle.gov  
**Contact Phone:** 206-684-3936

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>2,500 sf green roof in Seattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Private</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2005</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>NA</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):**

Planter boxes, 1-foot deep, grass

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage Layer</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation System (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Drain</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Root Barrier (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterproof Membrane</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>square feet</td>
<td>$25</td>
<td>2,500 sf</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

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**Seattle Green Roof Inventory**

Joel.Banslaben@seattle.gov

206-684-3936
# Green Roof Cost Request Form

**City/County/Company Name:** Private Owner  
**Contact Name:** Seattle Green Roof Inventory  
**Contact Email:** Joel.Banslaben@seattle.gov  
**Contact Phone:** 206-684-3936

## Project Information

- **Project Name:** 27,000+ sf green roof in Seattle  
- **Project Type (Public or Private):** Private  
- **Construction Date(s):** 2006  
- **Total Project Cost:** NA  
- **Funding Source (if Public Project):** NA

## Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):

- Intensive, planters, 12” media depth  
- Grasses, perennials, sedums

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage Layer</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation System (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Drain</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Root Barrier (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterproof Membrane</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>square feet</td>
<td>$100</td>
<td>27,000+ sf, roof deck with lots of amenities, outlier?</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

...
**Green Roof Cost Request Form**

<table>
<thead>
<tr>
<th>City/County/Company Name:</th>
<th>Private Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name:</td>
<td>Bellingham Green Roof Case Studies</td>
</tr>
<tr>
<td>Contact Email:</td>
<td>NA</td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>NA</td>
</tr>
</tbody>
</table>

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Lightcatcher Museum Green Roof</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Private</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2009</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$30,000 - 35,000 (everything installed above the roof decking)</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>NA</td>
</tr>
</tbody>
</table>

Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):

Information from: [http://www.bellinghamgreenroofs.com/case-studies](http://www.bellinghamgreenroofs.com/case-studies)

- Square Feet: 2,700
- Waterproofing: single-ply “EverGaurd” TPO, 60 mil, installed by Western Roofing
- Soil depth: 4” in layout, 6” at borders of mechanical structures (heat/ventilation) to allow for taller plants
- Roof systems: modular flats of pre-planted vegetation from LiveRoof
- Roof design: Renee LaCroix (City of Bellingham)

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage Layer</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation System (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Drain</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Root Barrier (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
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<tr>
<td>Soil/Planting Media</td>
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</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>square feet</td>
<td>$13</td>
<td>2,700 sf, assumes high end of $30,000 to 35,000 range</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

- [Information from: http://www.bellinghamgreenroofs.com/case-studies](http://www.bellinghamgreenroofs.com/case-studies)
**Green Roof Cost Request Form**

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</tr>
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<td>NA</td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>NA</td>
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</table>

**Project Information**

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Leppanen Green Roof</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Private</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2005</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$30,000 (est.)</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):**

Information from: [http://www.bellinghamgreenroofs.com/case-studies](http://www.bellinghamgreenroofs.com/case-studies)

Contractor: Mallard Construction (David Leppanen)
Design: David and Teresa Leppanen
Engineering: Dipple Engineering (primary), Bourne Engineering, Hadj Design
Plants: 25 flats of 4" pots of groundcover plants; 500 bulbs; ornamental grasses; herbs; larger plants in several pots
Soil mix: 15 yards – 75% crushed lava, 5% sand, 20% compost
Soil depth: 6 inches (avg.)
Drainage mat: J-Drain
Waterproofing: seamless single-sheet EPDM

### Estimated Costs per Facility Component

<table>
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<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
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<tbody>
<tr>
<td>Drainage Layer</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation System (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch</td>
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<td>Root Barrier (if used)</td>
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<td>Soil/Planting Media</td>
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</tr>
<tr>
<td>Waterproof Membrane</td>
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<td></td>
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</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
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### Estimated Cost for Installed Facility

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>square feet</td>
<td>$40</td>
<td>750 sf</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information


# Green Roof Cost Request Form

**City/County/Company Name:** Private Owner  
**Contact Name:** Seattle Green Roof Inventory  
**Contact Email:** Joel.Banslaben@seattle.gov  
**Contact Phone:** 206-684-3936

## Project Information

- **Project Name:** 8,355 sf green roof in Seattle  
- **Project Type (Public or Private):** Private  
- **Construction Date(s):** 2008  
- **Total Project Cost:** NA  
- **Funding Source (if Public Project):** NA

**Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):**

- Extensive, sedum mix
- Green roof consists of two components (ZeroFlor [4.5" media] and Green Grid [4" media])

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage Layer</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation System (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Drain</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Root Barrier (if used)</td>
<td>square feet</td>
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<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
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<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterproof Membrane</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>square feet</td>
<td>$19.50</td>
<td>Green Grid portion of green roof</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

Extra irrigation during establishment only, and as needed only on GreenGrid section.
Green Roof Cost Request Form

City/County/Company Name: Private Owner
Contact Name: Seattle Green Roof Inventory
Contact Email: Joel.Banslaben@seattle.gov
Contact Phone: 206-684-3936

<table>
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<th>Project Information</th>
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</thead>
<tbody>
<tr>
<td>Project Name: 8,355 sf green roof in Seattle</td>
</tr>
<tr>
<td>Project Type (Public or Private): Private</td>
</tr>
<tr>
<td>Construction Date(s): 2008</td>
</tr>
<tr>
<td>Total Project Cost: 2008</td>
</tr>
<tr>
<td>Funding Source (if Public Project): NA</td>
</tr>
</tbody>
</table>

Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):

Extensive, sedum mix
Green roof consists of two components (ZeroFlor [4.5” media] and Green Grid [4” media])

<table>
<thead>
<tr>
<th>Estimated Costs per Facility Component</th>
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<td>Item</td>
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<tr>
<td>Design</td>
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<tr>
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</tr>
</tbody>
</table>

<table>
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<tr>
<th>Additional Notes or Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra irrigation during establishment only, and as needed only on GreenGrid section.</td>
</tr>
</tbody>
</table>
# Green Roof Cost Request Form

**City/County/Company Name:** Seattle Public Library  
**Contact Name:** Seattle Green Roof Inventory  
**Contact Email:** Joel.Banslaben@seattle.gov  
**Contact Phone:** 206-684-3936

## Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Ballard Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2005</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$10.6 million (for new library branch building, including the green roof)</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>Libraries For All initiative</td>
</tr>
</tbody>
</table>

**Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):**  
Extensive green roof (20,500 sf), with viewing room open to the public. 4-6 inches of growing medium.

## Estimated Costs per Facility Component

<table>
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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Drainage Layer</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation System (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Soil/Planting Media</td>
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## Estimated Cost for Installed Facility

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<tr>
<th>Item</th>
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<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>square feet</td>
<td>$20</td>
<td>20,500 sf total</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

- Architect = Bohlin Cywinski Jackson
- Landscape Architect = Swift & Co.
- Green Roof Consultant = Rana Creek Habitat & Restoration
- Builder = PCL Construction Services

Waterproofing membrane, insulation, and drainage/moisture retention elements (part of a Garden Roof® Assembly) supplied by American Hydrotech, Inc. Seamless waterproofing membrane = Monolithic Membrane 6129® EV-TR (fabric reinforced, environmental grade, 25% recycled content). Water retention/drainage/aeration element = lightweight panels of 100% recycled polyethylene, molded into retention cups and drainage channels.

Strom water runoff is filtered through the planted roof or absorbed by the site landscape. Water usage on the roof and throughout the building is conserved through devices such as a computer controlled irrigation system, low flow fixtures, sensor and timed faucets, and waterless urinals.

The roof top planting is a mix of self-sustaining, drought tolerant, indigenous grasses and sedums. While regular roof maintenance is required, the green roof was designed with mainly fescue and sedum type plants, which minimize any additional maintenance requirements.

4-to-6 inches of growing medium is used and the mix was a custom blend based on German FLL standards. It was blown onto the roof and a biodegradable coconut fiber mat helps the plants during the establishment period by reducing wind and water erosion.
## Green Roof Cost Request Form

**City/County/Company Name:** Weston Solutions, Inc.

**Contact Name:** Arnab Bhowmick

**Contact Email:** Arnab.Bhowmick@westonsolutions.com

**Contact Phone:** (206) 521-7694

---

### Project Information

**Project Name:** GreenGrid® Intensive Green Roof System

**Project Type (Public or Private):** Both

**Construction Date(s):** 2011

**Total Project Cost:** NA

**Funding Source (if Public Project):** NA

### Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):

2'x2'x4" trays (approx. 1250) to cover 5000 sq ft.

Includes GreenGrid modules, growth media, plants (plugs planted on 6-inch on center), and a 2-ounce, non-woven geotextile root barrier lining the inside of each module.

---

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage Layer</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation System (if used)</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch</td>
<td>cubic ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Drain</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials (if used)</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Root Barrier (if used)</td>
<td>square ft</td>
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</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic ft</td>
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<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
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<td></td>
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### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>square ft</td>
<td>$13.91</td>
<td>$5000sf GreenGrid; inc. modules, growth media, plants, geotextile, and delivery; does not inc. tax</td>
</tr>
<tr>
<td>Design</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square ft</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Additional Notes or Information

- Sales tax is not included in the cost estimate.
- Building permits, if required, will be obtained by others.
- Roof live-load limits (saturated: approximately 40 lbs/sq ft.) have been documented by others, and a determination has been made by others that the GreenGrid green roof system will not overload the structure.
- An irrigation system (if desired) will be provided by others.
City/County/Company Name: City of Mukilteo
Contact Name: Jim Niggemyer
Contact Email: jniggemyer@ci.mukilteo.wa.us
Contact Phone: (425) 263-8081

Project Information
Project Name: Mukilteo City Hall
Project Type (Public or Private): Public
Construction Date(s): 2008
Total Project Cost: $6.9 million total cost
Funding Source (if Public Project): NA

Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):
2,700 sf steep pitched roof
Project also included the following BMPs; however, the costs for these BMPs could not be broken out separately:
• Bioretention
• Grasped Swale
• Porous Pavement
• Wet Pond

Estimated Costs per Facility Component

<table>
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<th>Units</th>
<th>Unit Cost</th>
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</tr>
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<tbody>
<tr>
<td>Drainage Layer</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
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<td>Grass</td>
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<td></td>
<td></td>
</tr>
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<td>Gravel (if used)</td>
<td>cubic feet</td>
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<td></td>
</tr>
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<td>square feet</td>
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<td>cubic feet</td>
<td></td>
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<tr>
<td>Waterproof Membrane</td>
<td>square feet</td>
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Estimated Cost for Installed Facility

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<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>square feet</td>
<td>$10</td>
<td>2,700 sf, doesn't include supporting roof structure</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
The structure to support the roof was designed to support the green roof and is not included in this cost. This cost does not reflect the additional ongoing maintenance costs of this roof. The roof requires weeding and irrigation.
### Project Information

- **Project Name:** Roof-lite Media
- **Project Type (Public or Private):**
- **Construction Date(s):** 2011
- **Total Project Cost:**
- **Funding Source (if Public Project):**

**Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):**

Certified Green Roof media (intensive, semi-intensive, and extensive)

### Estimated Costs per Facility Component

<table>
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<th>Unit Cost</th>
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<tbody>
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<td>Drainage Layer</td>
<td>square feet</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$3.30</td>
<td>Average cost for Rooflite media (2 CY super sacks); does not inc. trucking cost ($650)</td>
</tr>
<tr>
<td>Waterproof Membrane</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
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<td>square feet</td>
<td></td>
<td></td>
</tr>
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</table>

### Additional Notes or Information

- Rooflite extensive packaged in 2 yard super sacks - $90.40 per yard
- Rooflite semi intensive packaged in 2 yard super sacks - $89.55 per yard
- Rooflite intensive packaged in 2 yard super sacks - $88.95 per yard

- Rooflite extensive bulk - $62.55 per yard
- Rooflite semi intensive bulk - $61.70 per yard
- Rooflite intensive bulk - $61.10 per yard

- Trucking into Seattle – approximately $650 per truck
**Green Roof Cost Request Form**

City/County/Company Name: City of Seattle  
Contact Name: Seattle Green Roof Inventory  
Contact Email: Joel.Banslaben@seattle.gov  
Contact Phone: 206-684-3936

### Project Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name:</td>
<td>Seattle Justice Center</td>
</tr>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2004</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$91,350,000 total cost (excluding land costs)</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):**

Extensive green roof (8,500 sf), 6 inches of growing medium.

### Estimated Costs per Facility Component

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</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>square feet</td>
<td>$19.25</td>
<td>8,500 sf total</td>
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<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

- [Link to Greenroofs.com](http://www.greenroofs.com/projects/pview.php?id=311)
- Greenroof System: American Hydrotech
- Architects: NBBJ Design
- Civil Engineer & Landscape Architect: SvR Design Company
- Roofing Contractor: Snyder Roofing
- Landscape Architect/Greenroof Designer: SvR Design Company

Multi-layered waterproofing membrane integrated with a 6" deep engineered soil support system that includes insulation and drainage/moisture retention elements, all part of a total assembly supplied by American Hydrotech. The Justice Center used a custom mixture of nitrolized pine bark, sand, pumice, nutrients and peat.

Point Reyes Creeper, Barren Strawberry, carpet bugle, bearberry cotoneaster, potentilla, sheep fescue, woolly thyme, creeping thyme and sedum stonecrop. Some of the plants had to be replaced perhaps due to the fact there was initially not enough watering for establishment - the roof was retrofitted with drip irrigation after the fact.

Peter Steinbrueck, reporting for The Seattle Times on January 13, 2005 says the city's initial investment is paying off - "A 2003 study, commissioned by Seattle's Office of Sustainability and the Environment, revealed the Justice Center is saving as much as $148,000 each year due to its green roof."
# Green Roof Cost Request Form

**City/County/Company Name:** The Garland Company  
**Contact Name:** Greg Carothers  
**Contact Email:** gcarothers@garlandind.com  
**Contact Phone:** 253-929-9089

## Project Information
- **Project Name:** Extensive Green Roof  
- **Project Type (Public or Private):** Both  
- **Construction Date(s):** 2011  
- **Total Project Cost:** NA  
- **Funding Source (if Public Project):** NA

## Brief Project Description (include total green roof area, intensive or extensive design, soil media depth):

- **Evergreen State College** (Extensive Green roof with 3 ply modified in Hot. 30 year warranty 24,000 sq ft)
- **Puget Sound Energy Center** (Extensive Green roof with 3 ply modified in hot. 30 year warranty 18,000 sq ft)
- **Jones and Jones Architecture building for Bellevue Parks Dept.** (Extensive Green Roof with 3 ply modified in hot 30 year warranty 1,200 sq ft)
- **Harrison Medical Center Bremerton** (Extensive Green Roof with 3 ply modified Torch Applied. 30 year warranty 5,000 sq ft)

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainage Layer</td>
<td>square feet</td>
<td>$3.00</td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (if used)</td>
<td>cubic feet</td>
<td>$1.20</td>
<td>1-1/2 washed for perimeters</td>
</tr>
<tr>
<td>Irrigation System (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Drain</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Root Barrier (if used)</td>
<td>square feet</td>
<td>$2.20</td>
<td></td>
</tr>
<tr>
<td>Small Trees (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$10.00</td>
<td>Pre-Engineered soil for lighter fully saturated loads</td>
</tr>
<tr>
<td>Waterproof Membrane</td>
<td>square feet</td>
<td>$9, 14</td>
<td>Low, high cost (dependent upon performance, warranty, access, etc.)</td>
</tr>
<tr>
<td>Woody Shrubs (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Roof</td>
<td>square feet</td>
<td>$23, 30</td>
<td>Low, high cost (dependent on how extensive the roof garden is)</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td>Garland Services are included with material purchase</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td>$0.10</td>
<td>Dependent upon water schedule, plant maintenance, etc</td>
</tr>
</tbody>
</table>

## Additional Notes or Information

The Garland Roofing company is a high performance roofing company based in Cleveland OH. We have 5 regional salesmen throughout the State of Washington to help with any roofing needs. Our typical application for a green roof would be one of our many combinations of modified inner ply sheets and cap sheets. A 3 ply system is our most predominantly used arrangement since we believe in redundant water protection below the growth media. Once the soil is on the roof it is very difficult to detect and repair leaks if they happen so we look to provide the most "bullet proof" waterproofing system possible so it is a non issue in the future. We provide many services at no cost with our projects that include: 1) Initial building evaluation 2) Product recommendations and budgets 3) Specification and drawing package development 4) Assistance with bid walks and pre-construction meetings 5) Weekly job site inspections 6) Final close out with the issue of a typical Garland 30 year water tight warranty. Garland also is part of U.S. Communities group purchasing co-op which proves to be a very successful procurement option for public work. This meets all state RCW and bid laws.
Infiltration Trenches
Infiltration Trench Cost Request Form

City/County/Company Name: City of Lacey
Contact Name: Doug Christenson
Contact Email: dchriste@ci.lacey.wa.us
Contact Phone: 360-438-2686

Project Information

Project Name: 2011 Street Overlay Project
Project Type (Public or Private): Public
Construction Date(s): 2011
Total Project Cost: NA
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed):
Project included a stormwater component (drywells)

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.89</td>
<td>Extra excavation inc. haul</td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td>$1.68</td>
<td>Backfill for drywells, assumes 1.4 TN/CY</td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infiltration Trench</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

Gravel backfill for dry wells = $32.40/TN
Excavation = $24/CY (extra excavation including haul)
**Infiltration Trench Cost Request Form**

City/County/Company Name: City of Lacey
Contact Name: Doug Christenson
Contact Email: dchriste@ci.lacey.wa.us
Contact Phone: 360-438-2686

**Project Information**

Project Name: Carpenter Road Reconstruction
Project Type (Public or Private): Public
Construction Date(s): 2010
Total Project Cost: NA
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed):

Infiltration Gallery (60 inch, 230 LF)

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.44</td>
<td>Assumes equiv. to pond excavation inc. haul</td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infiltration Trench</td>
<td>square feet</td>
<td>$101.40</td>
<td>Infiltration Gallery - 60 Inch, 230 LF</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**

Infiltration Gallery = $116,610 per 1,150 SF
Excavation = $11.75/CY (assumes pond excavation inc. haul)
**Infiltration Trench Cost Request Form**

City/County/Company Name: Thurston County
Contact Name: Scott Lindblom
Contact Email: lindbls@co.thurston.wa.us
Contact Phone: 360-786-5133

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Evergreen Terrace Phase 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2008</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$365,586</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>Stormwater Utility Funding</td>
</tr>
</tbody>
</table>

Brief Project Description (include number and types of BMPs installed):

Stormwater retrofit project to reduce recurrent localized flooding in neighborhood caused by failing drywells. Major project components included traffic control, 7 new CBs, 610 lf of 12" storm pipe, stormwater treatment. Additional runoff treatment beyond pretreatment was required due to sensitive aquifer.

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infiltration Trench</td>
<td>square feet</td>
<td>$73.71</td>
<td>Infiltration gallery (5’ diam.), washed rock, rebuild paved roadway</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

Costs from project completed in 2008. 10’ deep excavation, entire roadway width, 136’ long. Includes washed rock backfill, three 5’ diameter perf CMP, rebuilding roadway. Does NOT include the Stormfilter Treatment system ($100,233), catch basins, or conveyance leading to Stormfilter/gallery. Costs also do NOT include mobilization, design, inspection, permits, traffic control, erosion/sediment control, removal of structures/obstructions, trimming and cleanup.
Infiltration Trench Cost Request Form

City/County/Company Name: Thurston County  
Contact Name: Scott Lindblom 
Contact Email: lindbls@co.thurston.wa.us 
Contact Phone: 360-786-5133

Project Information

Project Name: Hawaiian Court Stormwater Improvements 
Project Type (Public or Private): Public 
Construction Date(s): 2005 
Total Project Cost: $174,380 
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed):
Project involved removing existing storm drain system and installing new catch basins, a treatment device, and a storage/disposal gallery. Storage/disposal gallery cost provided as a lump sum cost.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backfilling</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.39</td>
<td>Structure excavation Class B inc. haul</td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass (if used)</td>
<td>square feet</td>
<td>$0.25</td>
<td>Seeding cost</td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td>$0.62</td>
<td>1 1/2” washed drain rock, assumes 1.4 TN/CY</td>
</tr>
<tr>
<td>Mulch (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perennials (if used)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media (if used)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infiltration Gallery</td>
<td>each</td>
<td>$51,440</td>
<td>60-Inch Perf. Alum. Steel 14 GA Pipe w/risers</td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infiltration Trench</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

1 1/2” washed drain rock = $12/TN
Excavation (structure class B inc. haul) = $10.40/CY
Seeding = $11,000/acre
Porous Pavement
# Porous Pavement Cost Request Form

City/County/Company Name: ACF West  
Contact Name: Don Pugh  
Contact Email: don@acfwest.com  
Contact Phone: (425) 415-6115

---

## Project Information

- **Project Name:** Grassy Pavers  
- **Project Type (Public or Private):** Various  
- **Construction Date(s):** 2011  
- **Total Project Cost:** NA  
- **Funding Source (if Public Project):** NA

**Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):**

---

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$2.25</td>
<td>Grassy Pavers</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information
# Porous Pavement Cost Request Form

**City/County/Company Name:** City of Auburn  
**Contact Name:** Jacob Sweeting  
**Contact Email:** jsweeting@auburnwa.gov  
**Contact Phone:** 253-804-5059

## Project Information

- **Project Name:** West Valley Highway Improvements  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2011  
- **Total Project Cost:** NA  
- **Funding Source (if Public Project):** NA

**Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):**  
6,750 sf pervious cement concrete sidewalk

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td>$0.87</td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$3.90</td>
<td>6,750 sf pervious concrete sidewalk</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td>$40</td>
<td>8-inch diameter</td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

- Porous pavement cost provided as $35/SY  
- Filter fabric = $7.80/SY
# Porous Pavement Cost Request Form

<table>
<thead>
<tr>
<th>City/County/Company Name:</th>
<th>Backstrom Curb &amp; Sidewalk, Inc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name:</td>
<td>Don Backstrom</td>
</tr>
<tr>
<td>Contact Email:</td>
<td><a href="mailto:don@backstromconcrete.com">don@backstromconcrete.com</a></td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>360.403.4866</td>
</tr>
</tbody>
</table>

## Project Information

- **Project Name:** Porous concrete sidewalk (4" thick)
- **Project Type (Public or Private):** Public
- **Construction Date(s):** 2011
- **Total Project Cost:**
- **Funding Source (if Public Project):**

### Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):

4" thick porous concrete sidewalk

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$3.95, 4.60</td>
<td>Low, high, 4&quot; porous concrete sidewalk</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

<table>
<thead>
<tr>
<th>Item</th>
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<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>
# Porous Pavement Cost Request Form

**City/County/Company Name:**  Backstrom Curb & Sidewalk, Inc  
**Contact Name:**  Don Backstrom  
**Contact Email:**  don@backstromconcrete.com  
**Contact Phone:**  360.403.4866

## Project Information

**Project Name:**  Wilson Toyota, Mercedes  
**Project Type (Public or Private):**  Private  
**Construction Date(s):**  2009  
**Total Project Cost:**  $568,000 (pervious concrete only)

**Funding Source (if Public Project):**

## Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):

Porous concrete pavement in substitution of conventional storm system. Just shy of 2.5 acres of porous pavement. We created the design specifications to suit the clients aesthetic desires.

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$5.28</td>
<td>6” and 8” thick porous concrete</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information
# Porous Pavement Cost Request Form

**City/County/Company Name:** City of Bellingham  
**Contact Name:** William M. Reilly  
**Contact Email:** wreilly@cob.org  
**Contact Phone:** 360-778-7955

## Project Information

| **Project Name:** | Northshore Water Quality EV-78  
| **Project Type (Public or Private):** | Public  
| **Construction Date(s):** | 2009 (June to Sept.)  
| **Total Project Cost:** | $538,264 (Cost for stormwater facility elements)  
| **Funding Source (if Public Project):** | SSWU, Street Fund |

**Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):**  
Project was for creation of sidewalks and bike lanes adjacent to an existing arterial. Project added pervious sidewalks and pervious bike lanes and configured them to receive total runoff from the roadway. Below sidewalk and bike lanes a sand filtration system was constructed with underdrains and encapsulated within filter fabric. Approximately 1 foot of space was left below the underdrain for infiltration into very tight soil. Short term infiltration rate of a approximately 0.1 inches per hour. A drainage area of approximately 9.3 acres including 1.83 acres of arterial street drains to a pervious area of 0.76 acres. To date there has been no outflow from the system. The entire area infiltrates to ground.

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th><strong>Item</strong></th>
<th><strong>Units</strong></th>
<th><strong>Unit Cost</strong></th>
<th><strong>Notes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.67</td>
<td>1100 cy @ $18/cy incl. haul</td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td>Included with underdrain</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td>Included with underdrain</td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td>Included with underdrain</td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$7.10</td>
<td>Average (1400sy 4in @$62/sy, 2300sy 8in @$65/sy)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td>$14</td>
<td>6,600 if in place with rock and fabric</td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th><strong>Item</strong></th>
<th><strong>Units</strong></th>
<th><strong>Unit Cost</strong></th>
<th><strong>Notes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$10.47</td>
<td>Pavement (33,300 SF) + underlying sand filter + excav</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$1.09</td>
<td>Portion of design cost for pavement/filter</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

Design cost is portion attributable to stormwater of $36,457/by 33,300 sf of pervious pavement. Likewise Porous Pavement cost based on $348,630/33,300.
**Porous Pavement Cost Request Form**

City/County/Company Name: Hastings Pavement Company, Inc.
Contact Name: Kevin Earley
Contact Email: kearley@nicolock.com
Contact Phone: (631) 774-6431

**Project Information**

- **Project Name:** Hastings Checker Block®
- **Project Type (Public or Private):** Checker Block - Porous Open Celled Grid Paver, Manufactured in California
- **Construction Date(s):** 2011
- **Total Project Cost:**
- **Funding Source (if Public Project):**

**Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):**

CHECKER BLOCK - POROUS OPEN CELLED GRID PAVER, MANUFACTURED IN CALIFORNIA.

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$3.50, 4.50</td>
<td>Low, high cost, depends on size of project, Open Celled Grid Pavers</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$7.50, 15</td>
<td>Low, high cost, installation of Open Celled Grid Pavers</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Additional Notes or Information**

Hastings Pavement Company is a Manufacturer of Checker Block ONLY. The cost information for other materials along with design and installation is not in our control. From our experience, installed open-celled grid projects in general cost between $7.50 and $15.00/SF. There are many variables including design requirements, stormwater objectives, subgrade conditions, traffic loading, labor costs, aggregate availability and costs, edge restraint requirements, etc.
# Porous Pavement Cost Request Form

**City/County/Company Name:** City of Issaquah  
**Contact Name:** Kerry Ritland, PE  
**Contact Email:** KerryR@ci.issaquah.wa.us  
**Contact Phone:** (425) 837-3410

## Project Information

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Central Park Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$510,651</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>$316,500 Department of Ecology LID grant</td>
</tr>
</tbody>
</table>

### Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):

62,000 square foot pervious asphalt parking lot with an 8000 sf rain garden (for overflow)

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
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</tbody>
</table>

## Estimated Cost for Installed Facility

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$2.37</td>
<td>62,000 sf pervious asphalt parking lot</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

Pervious asphalt cost provided as $89/TN for a total cost of $146,850
Porous Pavement Cost Request Form

City/County/Company Name: Mutual Materials
Contact Name: Dave Parisi
Contact Email: DParisi@mutualmaterials.com
Contact Phone: (425) 452-2359

Project Information

Project Name: Eco Priora Pavers
Project Type (Public or Private): Both
Construction Date(s): 2010
Total Project Cost: NA
Funding Source (if Public Project): NA

Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):
Eco Priora concrete pavers (ADA-approved, low bevel lip, flat areas, 3 1/8” thick)
1.5 to 2” thick bedding course (Typ. No. 8 aggregate) - cost not included
4” thick No. 57 stone open graded base
Min. 6” thick No. 2 stone subbase
Optional geotextile on bottom and sides of open-graded base

Estimated Costs per Facility Component

<table>
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<th>Unit Cost</th>
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</tr>
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<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$2.46</td>
<td>Eco Priora pavers, does not inc. underlying materials</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

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<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
Porous Pavement Cost Request Form

City/County/Company Name: NW Linings
Contact Name: Tony Bond
Contact Email: tonyb@northwestlinings.com
Contact Phone: (206) 851-6326

Project Information

Project Name: Hamilton Middle School – Seattle School District (Grasspave2)
Project Type (Public or Private): May 2011
Construction Date(s):
Total Project Cost:
Funding Source (if Public Project):

Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):

Estimated Costs per Facility Component

<table>
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<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td>$0.07</td>
<td>PermeaTex 4045 (4.5oz Non-Woven Geotextile), average of range provided</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
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<td>cubic feet</td>
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<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$2.10</td>
<td>Grasspave2, average of range provided ($2.05 - 2.15)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
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Estimated Cost for Installed Facility

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<td>square feet</td>
<td></td>
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</tr>
<tr>
<td>Design</td>
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<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

Additional projects in WA: University of Puget Sound Commencement Walk – Tacoma, WA – currently under construction – GrassPave2 installation
Denny/Chief Sealth School – Seattle, WA – currently scheduled for install Sept. 2011 – GrassPave2 Installation
High Point Phase 2 Parks – Seattle Housing Authority – Seattle, WA – currently scheduled for install fall 2011 – GrassPave2 installation
Pierce College – Puyallup, WA – installed June 2010, GrassPave2
Machias Elementary School – Snohomish School District – installed June 2011, GrassPave2
Tacoma Rescue Mission – Tacoma, WA – installed July 2011, GrassPave2
Porous Pavement Cost Request Form

City/County/Company Name: NW Linings  
Contact Name: Tony Bond  
Contact Email: tonyb@northwestlinings.com  
Contact Phone: (206) 851-6326

Project Information

Project Name: Rainier Vista – Seattle Housing Authority (Gravelpave2)  
Project Type (Public or Private):  
Construction Date(s): Sept. 2011  
Total Project Cost:  
Funding Source (if Public Project):  

Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):

Cost range provided for filter fabric ($0.75 - 0.78/SF).  
Cost range provided for porous pavement ($3.05 - 3.15/SF).

Estimated Costs per Facility Component

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<tr>
<th>Item</th>
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<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.09</td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td>$0.09</td>
<td>PermeaTex 4060 (6oz Non-Woven Geotextile), average of range provided</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td>$0.09</td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td>$0.09</td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td>$0.09</td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td>$0.09</td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$3.10</td>
<td>Gravelpave2, average of cost range provided ($3.05 - 3.15)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td>$0.09</td>
<td></td>
</tr>
</tbody>
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Estimated Cost for Installed Facility

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</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
Porous Pavement Cost Request Form

City/County/Company Name: Pierce County
Contact Name: Dawn Anderson
Contact Email: danders@co.pierce.wa.us
Contact Phone: 253-798-4671

Project Information
Project Name: 139th St E Cul-de-Sac
Project Type (Public or Private): Public
Construction Date(s): 2011
Total Project Cost: $348,652
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed):
Existing cul-de-sac replaced with 15,444 sf of porous concrete

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$1.19</td>
<td>Parking lot excavation, including haul</td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td>$1.49</td>
<td>2” leveling course for porous concrete</td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td>$1.04</td>
<td>11” minimum base course for porous concrete</td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$5.22</td>
<td>1,716 SY of porous concrete (7” depth)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$8.41</td>
<td>Inc. excavation, porous concrete, reservoir, &amp; leveling course</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
Excavation - $32/CY
Porous concrete pavement = $47/SY
Gravel base = $20/TN
Gravel leveling course = $34/TN
# Porous Pavement Cost Request Form

**City/County/Company Name:** Pierce County  
**Contact Name:** Dawn Anderson  
**Contact Email:** danders@co.pierce.wa.us  
**Contact Phone:** 253-798-4671

## Project Information

**Project Name:** Sprinkler Parking Lot LID - Phase 2  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2010  
**Total Project Cost:** $1.25 million ($1.7 million for Phase 1 and 2)  
**Funding Source (if Public Project):** $1 million Department of Ecology LID grant ($115,000 grant for Phase 1)

**Brief Project Description (include number and types of BMPs installed):**
- 90,500 sf of impervious area converted to 48,500 sf porous concrete and 42,000 sf porous asphalt (Phase 1 and 2)  
- 12,200 sf of impervious area converted to 3 bioretention areas (~ 600 plants)  
- 305 sf recycled rubber sidewalk

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.43</td>
<td>Parking lot excavation, including haul</td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/Finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td>$0.90</td>
<td>7&quot; gravel base and 6&quot; leveling course for porous asphalt</td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$1.27</td>
<td>4,645 SY of porous asphalt (3&quot; depth)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td>$6.25</td>
<td>4&quot; perforated pipe</td>
</tr>
<tr>
<td>Drainage Sand</td>
<td>cubic feet</td>
<td>$1.31</td>
<td>2&quot; of drainage sand below reservoir course</td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

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<th>Item</th>
<th>Units</th>
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<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$3.18</td>
<td>Inc. excavation, porous asphalt, drainage sand, reservoir, &amp; leveling course</td>
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<td>Design</td>
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<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

- Excavation - $11.60/CY  
- Porous asphalt pavement = $11.40/SY  
- Drainage sand = $35.50/CY  
- Gravel base = $24.40/CY
## Porous Pavement Cost Request Form

**City/County/Company Name:** Pierce County  
**Contact Name:** Dawn Anderson  
**Contact Email:** danders@co.pierce.wa.us  
**Contact Phone:** 253-798-4671

### Project Information

**Project Name:** Sprinkler Parking Lot LID - Phase 2  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2010  
**Total Project Cost:** $1.25 million ($1.7 million for Phase 1 and 2)  
**Funding Source (if Public Project):** $1 million Department of Ecology LID grant ($115,000 grant for Phase 1)

### Brief Project Description (include number and types of BMPs installed):

- 90,500 sf of impervious area converted to 48,500 sf porous concrete and 42,000 sf porous asphalt (Phase 1 and 2)  
- 32,200 sf of impervious area converted to 3 bioretention areas (~ 600 plants)  
- 305 sf of recycled rubber sidewalk

### Estimated Costs per Facility Component

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<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td>$0.90</td>
<td>7&quot; gravel base and 2&quot; leveling course for porous concrete</td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$3.63</td>
<td>5,380 SY of porous concrete (7&quot; depth)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drainage Sand</td>
<td>cubic feet</td>
<td>$1.31</td>
<td>2&quot; of drainage sand below reservoir course</td>
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</tbody>
</table>

### Estimated Cost for Installed Facility

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<th>Item</th>
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<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
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<td>$5.24</td>
<td>Inc. excavation, porous concrete, drainage sand, reservoir, &amp; leveling course</td>
</tr>
<tr>
<td>Design</td>
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<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

- Excavation - $11.90/CY  
- Porous concrete pavement = $32.69/SY  
- Drainage sand = $35.50/CY  
- Gravel base = $24.40/CY
**Porous Pavement Cost Request Form**

City/County/Company Name: Port of Anacortes  
Contact Name: Connie Thoman  
Contact Email: connie@portofanacortes.com  
Contact Phone: (360) 299-1818

**Project Information**

- Project Name: O Avenue  
- Project Type (Public or Private): Public  
- Construction Date(s): 2010  
- Total Project Cost: $245,000 (total project cost)  
- Funding Source (if Public Project): NA

**Brief Project Description (include number and types of BMPs installed):**

Pervious paving and 4 rain gardens (850 sq ft total) with artistic watering can downspout connections

**Estimated Costs per Facility Component**

<table>
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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
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</tbody>
</table>

**Estimated Cost for Installed Facility**

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$69.60</td>
<td>Assumes 2,500 sq ft permeable pavers, inc. underlying material</td>
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<tr>
<td>Design</td>
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</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**

- Pervious paving - $174,000  
- Rain Gardens (4) – $29,000  
- Watering cans and downspouts (4) – $42,000.
## Project Information

**Project Name:** Caldart Ave. Improvements Project  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2006  
**Total Project Cost:** Approx. $1 million  
**Funding Source (if Public Project):** $263,000 Department of Ecology LID Grant

### Brief Project Description (include number and types of BMPs installed):

The purpose of the 2006 Caldart Ave. Improvements Project was to improve traffic and pedestrian safety on a 1/3 mile segment of Caldart Avenue in Poulsbo. Several LID elements were included in the project design - they consist of approximately 2,200 feet of new 5 feet wide porous concrete sidewalks, 800 feet of bioretention swales, and a traffic island bioretention cell. ACE Paving Co., of Bremerton, WA installed all of the LID elements including both the pervious concrete sidewalks and bioretention cells.

$21,459 for 8,595 SF of porous concrete sidewalk

## Estimated Costs per Facility Component

<table>
<thead>
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<th>Item</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$2.50</td>
<td>Porous concrete sidewalk (8,595 SF)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
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</tr>
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<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
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<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information
Porous Pavement Cost Request Form

City/County/Company Name: City of Poulsbo
Contact Name: Jim Groh
Contact Email: jgroh@cityofpoulsbo.com
Contact Phone: 360.779.4078

Project Information
Project Name: Mesford Pervious Sidewalk and Parking Lane Project
Project Type (Public or Private): Public
Construction Date(s): 2010
Total Project Cost: $400,000
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed):
This project was completed in 2010 and included construction of a 9' wide sidewalk, paved parallel parking and new pavement on the existing road. Low Impact Development (LID) techniques were used to handle storm water, including pervious concrete and pervious asphalt.

Received bids for porous concrete and porous asphalt sidewalk alternatives (10,035 SF). Also installed 9,000 SF of porous asphalt parking.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>Excavation</td>
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<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$2.33</td>
<td>Porous asphalt parking (9,000 SF)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

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<tr>
<td>Design</td>
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<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

# Porous Pavement Cost Request Form

**City/County/Company Name:** City of Poulsbo  
**Contact Name:** Jim Groh  
**Contact Email:** jgroh@cityofpoulsbo.com  
**Contact Phone:** 360.779.4078

## Project Information

- **Project Name:** Mesford Pervious Sidewalk and Parking Lane Project  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2010  
- **Total Project Cost:** $400,000  
- **Funding Source (if Public Project):** NA

## Brief Project Description (include number and types of BMPs installed):

This project was completed in 2010 and included construction of a 9' wide sidewalk, paved parallel parking and new pavement on the existing road. Low Impact Development (LID) techniques were used to handle storm water, including pervious concrete and pervious asphalt.

Received bids for porous concrete and porous asphalt sidewalk alternatives (10,035 SF). Also installed 9,000 SF of porous asphalt parking.

## Estimated Costs per Facility Component

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<td></td>
</tr>
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<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
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<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$1.94</td>
<td>Porous asphalt sidewalk (10,035 SF)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
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## Estimated Cost for Installed Facility

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## Additional Notes or Information

...
# Porous Pavement Cost Request Form

**City/County/Company Name:** City of Poulsbo  
**Contact Name:** Jim Groh  
**Contact Email:** jgroh@cityofpoulsbo.com  
**Contact Phone:** 360.779.4078

## Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Mesford Pervious Sidewalk and Parking Lane Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2010</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$400,000</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
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## Brief Project Description (include number and types of BMPs installed):

This project was completed in 2010 and included construction of a 9' wide sidewalk, paved parallel parking and new pavement on the existing road. Low Impact Development (LID) techniques were used to handle storm water, including pervious concrete and pervious asphalt.

Received bids for porous concrete and porous asphalt sidewalk alternatives (10,035 SF). Also installed 9,000 SF of porous asphalt parking.

## Estimated Costs per Facility Component

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</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$4.33</td>
<td>Porous concrete sidewalk (10,035 SF)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
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<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

The project was completed in 2010 and included construction of a 9' wide sidewalk, paved parallel parking and new pavement on the existing road. Low Impact Development (LID) techniques were used to handle storm water, including pervious concrete and pervious asphalt.

Received bids for porous concrete and porous asphalt sidewalk alternatives (10,035 SF). Also installed 9,000 SF of porous asphalt parking.

Porous concrete sidewalk (10,035 SF)
## Porous Pavement Cost Request Form

**City/County/Company Name:** City of Redmond  
**Contact Name:** Andy Rheaume  
**Contact Email:** AJRHEAUME@redmond.gov  
**Contact Phone:** 425-556-2741

### Project Information
- **Project Name:** 185th Ave NE Extension  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2011  
- **Total Project Cost:** $747,168 (includes monitoring); $33,576 design cost; $513,301 construction and CM  
- **Funding Source (if Public Project):** $500,000 Department of Ecology LID grant

### Brief Project Description (include number and types of BMPs installed):
Green stormwater infrastructure (570 linear feet of bioretention swales and 6,840 square feet of porous concrete sidewalk) as part of the 185th Avenue NE Extension project.

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>square feet</td>
<td>$0.19</td>
<td>Based on $5/CY</td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td>$1.11</td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$3.62</td>
<td>6,840 sf porous concrete sidewalk</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td>$9.75</td>
<td>6- or 8-inch pipe</td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information
- Porous pavement cost provided as $32.55/SY  
- Gravel backfill around underdrain = $46.50/CY  
- Geomembrane = $10/SY
**Porous Pavement Cost Request Form**

City/County/Company Name: City of Redmond  
Contact Name: Andy Rheaume  
Contact Email: AJRHEAUME@redmond.gov  
Contact Phone: 425-556-2741

---

**Project Information**

Project Name: Bear Creek Park WQ Facility  
Project Type (Public or Private): Public  
Construction Date(s): 2011  
Total Project Cost: $442,127  
Funding Source (if Public Project): NA

**Brief Project Description (include number and types of BMPs installed):**

This project includes construction of a stormwater wetland (4,400 sf) and associated piping and planting; construction of a concrete block retaining wall; stream buffer mitigation; tree replacement, installation of short soft-surface interpretative trail; and replacement of asphalt pedestrian/biking trail with porous pavement (7,800 sf).

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>square feet</td>
<td>$1.10</td>
<td>Removal of existing trail</td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td>$3.40</td>
<td>Porous pavement base course (6&quot; deep)</td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$4.52</td>
<td>7,800 sf porous asphalt (HMA)</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$7.32</td>
<td>7,800 sf porous asphalt (HMA), 6&quot; base course, removal of existing trail</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**

Porous pavement (HMA) = $125/TN or $35,350  
Porous pavement base course = $38.35/TN or $13,269.10  
Removal of existing trail = $8,600
**Porous Pavement Cost Request Form**

**City/County/Company Name:** Seattle Public Utilities  
**Contact Name:** Emiko Takahashi  
**Contact Email:** emiko.takahashi@seattle.gov  
**Contact Phone:** (206) 615-1695

### Project Information

- **Project Name:** Ballard Green Alleys  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2010  
- **Total Project Cost:** NA  
- **Funding Source (if Public Project):** NA

**Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):**

Porous concrete (4-foot wide strip)

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$33</td>
<td>134 LF x 4 ft wide porous pavement</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$29.70</td>
<td>Soft costs (90% of construction costs)</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information
**City/County/Company Name:** Seattle Public Utilities  
**Contact Name:** Emiko Takahashi  
**Contact Email:** emiko.takahashi@seattle.gov  
**Contact Phone:** (206) 615-1695

---

**Project Information**

- **Project Name:** Green Alleys  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2010  
- **Total Project Cost:** NA  
- **Funding Source (if Public Project):** NA

---

**Brief Project Description** (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):  
Porous concrete (4-foot wide strip)

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$26</td>
<td>Construction cost</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$23.40</td>
<td>Soft costs (90% of construction costs)</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td>$0.02</td>
<td></td>
</tr>
</tbody>
</table>

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**Additional Notes or Information**

SPU’s estimate per square foot mitigated is $6.50 (assumes 25% sizing factor, total cost per SF is $26). This cost is higher than costs in other jurisdiction for a number of reasons. First, construction in the geographical area of Seattle is very expensive. In addition, traffic management, labor and mobilization costs and natural resources/materials are high. Second, the designs are complex since alleys are narrow, space is very tight, and the porous pavement must meet two criteria: the ability to be swept by regenerative sweepers and also perform in conveying stormwater.
# Porous Pavement Cost Request Form

**City/County/Company Name:** Stoneway Concrete  
**Contact Name:** Mike Weeks  
**Contact Email:** mweeks@stonewayconcrete.com  
**Contact Phone:** 425-226-1000 x 3314

---

## Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Many projects over 10 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Both</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2002 to present</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>Fed, state, city, county, and private work</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td></td>
</tr>
</tbody>
</table>

---

## Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):

We are a concrete material supplier in central King County. We have supplied thousands of cubic yards of pervious concrete over the last 10 years in our market. Many projects for cities, parks, DOT's, housing authorities, schools, and private projects. We do not place or finish concrete, we only supply to contractors who do the actual placement.

---

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>cubic yard</td>
<td>$125</td>
<td>Delivered to job site in mixer; cost provided in CY, not SF</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td>$1.75</td>
<td>Labor and equipment and plastic; 20,000 to 75,000 SF project</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

Stoneway Concrete mix EPC is designed for void contents of 15 to 25%. Actual in-place void content is dependant on placement methods and the work of others. The pervious material is per ACI 522. Our material includes a micro fiber and hydration stabilizer. Price includes these items and Environmental compliance. Addition items such as cold or hot weather placements, color, other admixtures are all additional to the $125/ CY noted above.
**Porous Pavement Cost Request Form**

City/County/Company Name:  
Contact Name:  
Contact Email:  
Contact Phone:  

---

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Aqua Bric Pavers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Both</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2010</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>NA</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>NA</td>
</tr>
</tbody>
</table>

Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):

- Aqua Bric pavers (flat areas only)
- 2” thick bedding course
- 4” thick base course
- Minimum 12” thick subbase

---

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (reservoir course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$3.46</td>
<td>Aqua Bric pavers, does not inc. underlying materials</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Estimated Cost for Installed Facility

<table>
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<tr>
<th>Item</th>
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<th>Unit Cost</th>
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<tbody>
<tr>
<td>Porous Pavement</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Additional Notes or Information
**Porous Pavement Cost Request Form**

City/County/Company Name: Willamette Graystone  
Contact Name: NA  
Contact Email: NA  
Contact Phone: (541) 726-7667

**Project Information**

| Project Name: | Aqua Loc Pavers  
Project Type (Public or Private): | Both  
Construction Date(s): | 2010  
Total Project Cost: | NA  
Funding Source (if Public Project): | NA

Brief Project Description (include type of porous pavement installed [asphalt, concrete, pavers, open-celled grid]):

Aqua Loc pavers (flat areas only)  
2" thick bedding course  
4" thick base course  
Minimum 12" thick subbase

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Fabric</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel (filter course)</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation Well</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porous Pavement Material</td>
<td>square feet</td>
<td>$3.53</td>
<td>Aqua Loc pavers, does not inc. underlying materials</td>
</tr>
<tr>
<td>Underdrain Pipe</td>
<td>feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Estimated Cost for Installed Facility**

<table>
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<tr>
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<tbody>
<tr>
<td>Porous Pavement</td>
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<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**
Rain Barrels
Rain Barrel Cost Request Form

City/County/Company Name: Aaron's Rain Barrels
Contact Name: NA
Contact Email: rainbarrel@gmail.com
Contact Phone: 978.790.1816

Project Information

Project Name: Standard Rain Barrel
Project Type (Public or Private): Public
Construction Date(s): 2011
Total Project Cost: NA
Funding Source (if Public Project): NA

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
Made from 20 pounds of thick 100% recycled food grade plastic.
Dimensions: 36” (high) x 23” (wide)
Color: Cool White – (Paintable)
Comes with a Universal Down Spout Adapter for direct connection to any gutter.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$150</td>
<td>Free shipping, inc. gutter connection, 58 gallons</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
Rain Barrel Cost Request Form

City/County/Company Name: Aquabrarrel Rain Barrel
Contact Name: NA
Contact Email: orders@Aquabrarrel.com
Contact Phone: 301-253-8855

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Classic Aquabrarrel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Aquabrarrel</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td></td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td></td>
</tr>
</tbody>
</table>

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

55-gallon pre-drilled plastic barrel
Includes shut off valve, 3-piece hose assembly, overflow port, downspout adapter
Purchase downspout to barrel connection separately

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$99.25</td>
<td>55 gallons</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td>$18</td>
<td>Downspout flex pipe</td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information


### Rain Barrel Cost Request Form

- **City/County/Company Name:** Arid Solutions  
- **Contact Name:** NA  
- **Contact Email:** Sales1@cleanairgardening.com  
- **Contact Phone:** 505-332-9911

#### Project Information
- **Project Name:** Octagon Rain Barrel  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2011  
- **Total Project Cost:** NA  
- **Funding Source (if Public Project):** NA

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):** Includes: brass spigot w/teflon tape, adjustable Y shut off (provides 2 hose outlets), additional garden hose outlet below spigot for connecting tanks at the bottom, 2 hose ends, plastic inlet screen screen, 2 overflow outlets,

#### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$148</td>
<td>54 gallons, does not inc. shipping ($21)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Additional Notes or Information
Rain Barrel Cost Request Form

City/County/Company Name: City of Bellingham
Contact Name: William M. Reilly
Contact Email: wreilly@cob.org
Contact Phone: 360-778-7955

Project Information
Project Name: Residential Stormwater Retrofit Project
Project Type (Public or Private): Public
Construction Date(s): 2008-2011
Total Project Cost: $74,603, barrel costs and installation only. Part of a larger grant including education, etc.
Funding Source (if Public Project): Ecology Grant and SSWU

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
This project provided the state of the art rain barrels to homes in our Lake Whatcom Watershed for flow reduction and to homes that had roof leaders tied into our sanitary sewer system. 152 homes were served with the grant which included installation of 95 gallon corner rain barrels and all necessary plumbing. Water is slowly let out through an orifaced dispersal system during the winter and water can be stored in summer for reuse. A total of 305 barrels were installed to derive this record.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$197.94</td>
<td>95 gal brl incl msqto scr., sgts &amp; overflow</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td>$25.43</td>
<td>Connections, dispersal system, foundation</td>
</tr>
<tr>
<td>Installation Labor</td>
<td>per unit</td>
<td>$21.23</td>
<td>Labor at $12/hr, each barrel requires approx. 1.77 hrs for installation</td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
**Rain Barrel Cost Request Form**

**City/County/Company Name:** Cypress Designs
**Contact Name:** NA
**Contact Email:** info@cypressdesigns.com
**Contact Phone:** 360-224-1544

---

**Project Information**

**Project Name:** Freewater Rain Collection System
**Project Type (Public or Private):** Public
**Construction Date(s):** 2011
**Total Project Cost:**
**Funding Source (if Public Project):**

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

Polyethylene, includes self-cleaning filter assembly and hose adaptor, manufactured in Bellingham, sold through hardwaresales.com

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$240, 340</td>
<td>Low (50 gal.), high (95 gal.), free shipping</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Additional Notes or Information**

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## Project Information

<table>
<thead>
<tr>
<th>City/County/Company Name:</th>
<th>Eagle Peak Containers, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name:</td>
<td>NA</td>
</tr>
<tr>
<td>Contact Email:</td>
<td><a href="mailto:eaglepeak@cda.twcbc.com">eaglepeak@cda.twcbc.com</a></td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>208-683-2618</td>
</tr>
</tbody>
</table>

### Project Name:
Rain Collection Barrels

### Project Type (Public or Private):
Public

### Construction Date(s):
2011

### Total Project Cost:

### Funding Source (if Public Project):

### Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
Recycled and Reconditioned used Food Grade Poly Barrel.

- Low price = barrel only, with 1 Spigot
- Mid price = barrel only, with 2 Spigots
- High price = barrel with Complete water Collection System & 2 Spigots, Barrel Modification, Drop in Basket Screen and Down Spout Adapter.

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$24.50, 36.50, 73.50</td>
<td>Low, mid, high; 50-55 gallon; does not inc. shipping ($32-60)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

- 50-gallon drums can ship USPS for $32 each
- 55-gallon drums must ship FedEx for $60 each
**Rain Barrel Cost Request Form**

**City/County/Company Name:** Gardeners Supply Company  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** 1-800-876-5520

### Project Information

- **Project Name:** Deluxe Rain Barrel  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2011  
- **Total Project Cost:**  
- **Funding Source (if Public Project):**

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

- Materials: Sturdy polyethylene with 25% recycled content  
- Size: 36” H x 28” diameter  
- Include debris screen, spigot, overflow outlet, 4’ hose

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$169</td>
<td>75 gallon, does not inc. shipping ($45.28)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td>$29.95</td>
<td>Downspout diverter</td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

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## Rain Barrel Cost Request Form

<table>
<thead>
<tr>
<th>City/County/Company Name:</th>
<th>Gardeners Supply Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name:</td>
<td>NA</td>
</tr>
<tr>
<td>Contact Email:</td>
<td>NA</td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>1-800-876-5520</td>
</tr>
</tbody>
</table>

### Project Information

- **Project Name:** Flat-Back Rain Barrel
- **Project Type (Public or Private):**
- **Construction Date(s):** 2011
- **Total Project Cost:**
- **Funding Source (if Public Project):**

### Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

- Materials: Durable polyethylene with a solid brass spigot
- Size: 25" W x 36" H x 19" D
- Include debris screen, spigot, hose attachment

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$199</td>
<td>50 gallon, does not inc. shipping ($43.88)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td>$29.95</td>
<td>Downspout diverter</td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

...
Rain Barrel Cost Request Form

City/County/Company Name: Gardeners Supply Company
Contact Name: NA
Contact Email: NA
Contact Phone: 1-800-876-5520

Project Information

Project Name: Madison Rain Barrel
Project Type (Public or Private):
Construction Date(s): 2011
Total Project Cost:
Funding Source (if Public Project):

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
Materials: High grade polyethylene with UV inhibitors
Size: 22" L x 19" W x 34-1/2" H; Planter is 16-1/2" L x 9-1/2" W x 8" H
Include 3' overflow hose and 4' garden hose with shut-off valve

<table>
<thead>
<tr>
<th>Estimated Costs per Facility Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Rain Barrel</td>
</tr>
<tr>
<td>Gutter Connection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimated Cost for Installed Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>Rain Barrel</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
</tr>
</tbody>
</table>

Additional Notes or Information
Rain Barrel Cost Request Form

City/County/Company Name: Gardeners Supply Company
Contact Name: NA
Contact Email: NA
Contact Phone: 1-800-876-5520

**Project Information**

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Rainwater Urn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td></td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td></td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td></td>
</tr>
</tbody>
</table>

Brief Project Description (include number of rain barrels, storage volume, and material {polyethylene, etc.}):

Materials: UV-stabilized polyethylene
Size: 23" diameter x 33" H (50 gal.) or 20" diameter x 45-1/2" H (65 gal.)
Includes brass spigot, 4' hose (50 gal.) or 6' hose (65 gal.)

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$149.219</td>
<td>Low (50 gal.), High (65 gal.), does not inc. shipping ($27.88 [50 gal.] or $46.28 [65 gal.])</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td>$29.95</td>
<td>Downspout diverter</td>
</tr>
</tbody>
</table>

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**
### Rain Barrel Cost Request Form

**City/County/Company Name:** Gardeners Supply Company  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** 1-800-876-5520

---

### Project Information

**Project Name:** Santa Fe Rain Barrel  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**

---

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

- Materials: UV-stable polyethylene
- Size: 33-1/2" H x 20" square at top, 14" square at bottom
- Includes two 2" overflow tubes in top back, debris screen, and 4' hose with shut-off valve

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### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$149</td>
<td>47 gallon, does not inc. shipping ($27.88)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td>$29.95</td>
<td>Downspout diverter</td>
</tr>
</tbody>
</table>

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### Estimated Cost for Installed Facility

<table>
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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Additional Notes or Information
# Rain Barrel Cost Request Form

**City/County/Company Name:** Grady Barrels  
**Contact Name:** NA  
**Contact Email:** danny@gradybarrels.com  
**Contact Phone:** 360-509-8361

### Project Information

**Project Name:** Grady Barrels  
**Project Type (Public or Private):** Grady Barrels  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

Recycled 55 gallon food grade barrels from local companies.
Includes brass hose bib and optional overflow fitting.

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$55</td>
<td>55-gallon, includes 3/4&quot; faucet, does not inc. shipping</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td>$23</td>
<td>Free shipping</td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

We arrange frequent delivery trips. Any towns and cities located near the I-5 from Seattle down to Sacramento can receive a delivery. We can also arrange special trips to places like the Oregon Coast and Bend. A small delivery fee may be added to the cost of your rain barrel.
Rain Barrel Cost Request Form

City/County/Company Name: Natural Rain Water
Contact Name: NA
Contact Email: naturalrainwater@yahoo.com
Contact Phone: (253) 272-8173

Project Information
Project Name: Rain Barrel
Project Type (Public or Private): Rain Barrel
Construction Date(s): 2011
Total Project Cost: 
Funding Source (if Public Project): 

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

Estimated Costs per Facility Component
<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$85</td>
<td>50 gallon, does not inc. shipping ($35)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility
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<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
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</tbody>
</table>

Additional Notes or Information
**Rain Barrel Cost Request Form**

**Project Information**

<table>
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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$85</td>
<td>Includes 60 gal rain barrel, assembled</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td>$2.50</td>
<td>Includes flex elbow</td>
</tr>
<tr>
<td>Connection/Use kit</td>
<td>per unit</td>
<td>$13</td>
<td>Includes overflow hose, splitter</td>
</tr>
<tr>
<td>Installation</td>
<td>per unit</td>
<td>$29</td>
<td>Includes cinder blocks, labor</td>
</tr>
</tbody>
</table>

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel (if known)</td>
<td>per unit</td>
<td>$129.50</td>
<td>Total pre-tax cost</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**

For the 2011 program, 3 of the 8 rain barrels were donated by Dan Borba of Rain Water Gizmos and Gadgets (www.naturarrainwater.com). The Total Project Cost indicated on row 13 above is for 5 barrels, installed. The referenced website provides cost information as follows: Rain Barrel, 50 or 60 gal: $85; connector kit (overflow hose, splitter): $14.99.
City/County/Company Name: Rain Dance Water Barrels  
Contact Name: NA  
Contact Email: raindancebarrels@gmail.com  
Contact Phone: NA  

**Project Information**

Project Name: Rain Dance Water Barrels  
Project Type (Public or Private):  
Construction Date(s): 2011  
Total Project Cost:  
Funding Source (if Public Project):  

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

Each 55 gallon barrel is made from clean recycled food-grade plastic barrel and includes spigot and Watersaver system.

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
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<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$85</td>
<td>55 gallons</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**
# Rain Barrel Cost Request Form

## Project Information

<table>
<thead>
<tr>
<th>City/County/Company Name:</th>
<th>Rain Ready</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name:</td>
<td>NA</td>
</tr>
<tr>
<td>Contact Email:</td>
<td>NA</td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>(360) 424-0356</td>
</tr>
</tbody>
</table>

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Rain Ready Rain Barrel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td></td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td></td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td></td>
</tr>
</tbody>
</table>

### Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

Measurements: 54" height x 42" width at base x 21" from house wall
Includes 2 faucets, debris screen, overflow cap, attachment and elbow for drain

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$189</td>
<td>90 gallon, pick-up near Seattle or Portland</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information


# Rain Barrel Cost Request Form

**City/County/Company Name:** Rain Tank Depot  
**Contact Name:** NA  
**Contact Email:** info@tank-depot.com  
**Contact Phone:** 866-926-5603

## Project Information

**Project Name:** Agua Fria Rain Barrel  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**  

<table>
<thead>
<tr>
<th>Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):</th>
</tr>
</thead>
</table>
| 55 Gallons - 22 ¾” D x 33 ¾” H  
Recyclable virgin resin with full UV protection.  
¾” NPT drain valve (in PLUS Version)  
1 ½” NPT primary overflow fitting (2” on 360 Gallon)  
1 ½” NPT back up overflow / linking port  
¾” NPR bucket high throttling valve (in PLUS Version) |

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$225</td>
<td>55 gallon, does not inc. shipping ($210)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

Also available in the following sizes (not included on this form):  
100 Gallons – 26 ¾” D x 42” H  
200 Gallons - 35 ¼” D x 47” H  
360 Gallons - 48” D x 51 ½” H
## Rain Barrel Cost Request Form

**City/County/Company Name:** Rain Tank Depot  
**Contact Name:** NA  
**Contact Email:** info@tank-depot.com  
**Contact Phone:** 866-926-5603

### Project Information

**Project Name:** Big Blue Rain Barrel  
**Project Type (Public or Private):**  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**

### Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

Made of durable recycled food-grade plastic resin  
Includes brass spigot and inlet screen  
Can be linked to other barrels for greater capacity  
24” Diameter x 35” Tall

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$80</td>
<td>55 gallon, does not inc. shipping ($145)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information
**Rain Barrel Cost Request Form**

**City/County/Company Name:** Rain Tank Depot  
**Contact Name:** NA  
**Contact Email:** info@tank-depot.com  
**Contact Phone:** 866-926-5603

### Project Information

**Project Name:** Cubo Rain Barrel  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**

### Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

55 Gallons - 22 1/4" D x 33 3/4" H  
The Cubo is built with UV protection additive. The dark brown color helps to minimize algae growth and the built-in color pigment eliminates future paint chipping.  
Fitting for drain valve (3/4" NPT fitting, single threaded, installed as close to bottom as possible  
Fitting for primary overflow (1-1/2" NPT fitting, double threaded, installed as close to the top as possible

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$185</td>
<td>55 gallon, does not inc. shipping ($210)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
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<tr>
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<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
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</tbody>
</table>

### Additional Notes or Information

Also available in the following sizes (not included on this form):  
100 Gallons – 26 3/4" D x 42" H  
200 Gallons – 35 ½” D x 47” H
## Rain Barrel Cost Request Form

**City/County/Company Name:** Rain Tank Depot  
**Contact Name:** NA  
**Contact Email:** info@tank-depot.com  
**Contact Phone:** 866-926-5603

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Flat-Back Rain Collection Barrel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td></td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td></td>
</tr>
</tbody>
</table>

### Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

- Heavy duty rotational moulded construction, UV8 stabilizing package for protection from sunlight
- Flat side to fit flush against wall
- Shut-off valve for hose hook-up, dual overflow
- Screen to keep out debris and insects
- Does not include stand ($25)

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$80</td>
<td>50 gallon, does not inc. shipping ($78)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

- Add any additional notes or information here.
### Project Information

- **Project Name:** Garden Pal Rain Barrel
- **Project Type (Public or Private):** Public Project
- **Construction Date(s):** 2011
- **Total Project Cost:**
- **Funding Source (if Public Project):**

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

constructed from 100% virgin UV inhibited polyethylene resin. Includes an 8" manway ring with a 16 mesh mosquito-proof screen installed and a 3/4" male hose adapter. Size: 20"D x 38"H

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$62</td>
<td>55 gallon, does not inc. shipping ($15.40)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
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<td></td>
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</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

Also available in 100-gallon and 150-gallon version (not included on this form).
Rain Barrel Cost Request Form

City/County/Company Name: Rain Tank Depot
Contact Name: NA
Contact Email: info@tank-depot.com
Contact Phone: 866-926-5603

Project Name: Nino Rain Barrel
Project Type (Public or Private): Public Rain Barrel
Construction Date(s): 2011
Total Project Cost: 
Funding Source (if Public Project): 

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
The Nino is a combination 55 gallon rain barrel and planter.
Includes a 3/4" drain valve with garden hose threads at the very bottom and an 1-1/2" hidden overflow.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$190</td>
<td>55 gallon, does not inc. shipping ($69)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
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</table>

Estimated Cost for Installed Facility

<table>
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<tr>
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<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
**Rain Barrel Cost Request Form**

City/County/Company Name: Rain Tank Depot
Contact Name: NA
Contact Email: info@tank-depot.com
Contact Phone: 866-926-5803

---

**Project Information**

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Peso Rain Barrels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td></td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td></td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td></td>
</tr>
</tbody>
</table>

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

50 Gallons - 20” D x 36” H
65 Gallons - 20” D x 48” H
Materials: food grade plastic resin. Includes screened top with Snap Ring; 2 installed welded fittings (a 3/4” Drain Valve with garden hose thread and a 1-1/2” external overflow)

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<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$135, 145</td>
<td>Low (50 gal.), high (65 gal.), does not inc. shipping ($78 and $159)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Additional Notes or Information**
Rain Barrel Cost Request Form

City/County/Company Name: Rain Tank Depot
Contact Name: NA
Contact Email: info@tank-depot.com
Contact Phone: 866-926-5603

Project Information
Project Name: Rain Water Collector
Project Type (Public or Private):
Construction Date(s): 2011
Total Project Cost:
Funding Source (if Public Project):

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
Made from recycled plastic
Wood grain effect
Includes water tap (spigot)
Stand not included ($37)

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$70</td>
<td>53 gallon, does not inc. shipping ($162)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
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<th>Item</th>
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<th>Notes</th>
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<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
87-gallon rain barrel also available (not included on this form)
## Rain Barrel Cost Request Form

<table>
<thead>
<tr>
<th>City/County/Company Name:</th>
<th>Rain Tank Depot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name:</td>
<td>NA</td>
</tr>
<tr>
<td>Contact Email:</td>
<td><a href="mailto:info@tank-depot.com">info@tank-depot.com</a></td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>866-926-5603</td>
</tr>
</tbody>
</table>

### Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Rain Wizard Rain Barrel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td></td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td></td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td></td>
</tr>
</tbody>
</table>

### Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

Dimensions: 31”H x 22”D x 23”W
Made of 100% recycled plastic resin
Includes brass spigot and overflow valve

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$90</td>
<td>50 gallon, does not inc. shipping ($81)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
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</tbody>
</table>

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<tr>
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<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

A stained model of this rain barrel is also available for $117.
Rain Barrel Cost Request Form

City/County/Company Name: Rain Tank Depot
Contact Name: NA
Contact Email: info@tank-depot.com
Contact Phone: 866-926-5603

Project Information

Project Name: Spruce Creek Rain Barrel
Project Type (Public or Private):
Construction Date(s): 2011
Total Project Cost:
Funding Source (if Public Project):

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
Size: 23"L x 23"W x 36"H
Materials: UV protected, durable plastic
Includes brass spigot and automatic overflow

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$165</td>
<td>54 gallon, does not inc. shipping ($86)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
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</tbody>
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<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
## Rain Barrel Cost Request Form

**City/County/Company Name:** Rain Tank Depot  
**Contact Name:** NA  
**Contact Email:** info@tank-depot.com  
**Contact Phone:** 866-935-5603

### Project Information

- **Project Name:** Villa Rain Barrels  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2011  
- **Total Project Cost:**  
- **Funding Source (if Public Project):**

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

Made of thick food grade polyethylene resins. Includes non-removable top with plastic basket strainers, plastic drain valves that fit a garden hose thread, 1-1/2” overflow fitting.

- 50-gallon size: 20”D x 36”H
- 55-gallon size: 22.25”D x 33.75”H
- 65-gallon size: 20”D x 48”H

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$105, 120, 150</td>
<td>Low (50 gal.), mid (65 gal.), high (55 gal.), does not inc. shipping ($210)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
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</tbody>
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<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information

Also available in 100-gallon, 200-gallon, and 360-gallon sizes (not included on this form).
Rain Barrel Cost Request Form

City/County/Company Name: RainReserve
Contact Name: NA
Contact Email: NA
Contact Phone: (417) 429-1356

Project Information

Project Name: RainReserve Rain Barrel System (Oak Design)
Project Type (Public or Private):
Construction Date(s): 2011
Total Project Cost: 
Funding Source (if Public Project): 

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
The RainReserve Rain Barrel System (Oak Design) includes a plastic, wood-grain barrel and the complete RainReserve system. The rain barrel is made of recycled plastic resin in oak color, 50 gallon closed top.

The rain barrel system comes complete with the plastic, wood-grain barrel, rain diverter, 6 feet of plastic collapsible and expandable tubing, self-sealing fittings, and a high-flow spigot for attaching a soaker or garden hose. Adapter included for 3x4 downspouts.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$200</td>
<td>50 gallon, shipping not included</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
# Rain Barrel Cost Request Form

**City/County/Company Name:** Rainsaver Systems  
**Contact Name:** NA  
**Contact Email:** Sales1@cleanairgardening.com  
**Contact Phone:** 214-370-0530

## Project Information

- **Project Name:** 80 Gallon Rainsaver Rain Barrel  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2011  
- **Total Project Cost:**  
- **Funding Source (if Public Project):**

## Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

Base is 39 inches wide. Top is 30 inches wide. Base is 20 inches deep. Top is 15 1/2 inches deep. Assembled Rainsaver rain barrel is 55 inches tall. Made of polyethylene. Includes tap for filling buckets or second hose, twin inlet troughs (one near either side), inlet screen.

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$300</td>
<td>80 gallon, free shipping</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td>$30</td>
<td>Garden Watersaver Downspout</td>
</tr>
</tbody>
</table>

## Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information


# Rain Barrel Cost Request Form

**City/County/Company Name:** Rainwater Harvesting Systems  
**Contact Name:** NA  
**Contact Email:** info@irainharvest.com  
**Contact Phone:** (704) 657-0527

## Project Information

- **Project Name:** RainPro, RainPro Plus, and RainPro Elite  
- **Project Type (Public or Private):**  
- **Construction Date(s):** 2011  
- **Total Project Cost:**  
- **Funding Source (if Public Project):**

## Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

The RainPro consists of 100% recycled materials. The RainPro Plus is an upgraded model available in hunter green. It will blend with any landscape design, and is manufactured of 100% virgin plastic material. The RainPro Elite model is manufactured of 100% virgin plastic material, and has the appearance of granite. It is available in two colors, sandstone and gray granite. All units include: two solid brass spigots, overflow - manifold hose, Teflon tape, nuts bolts and washers, and built-in insect screens.

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$269, 299, 329</td>
<td>Low (Pro), mid (Pro Plus), high (Pro Elite), free shipping</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
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</tbody>
</table>

## Estimated Cost for Installed Facility

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<th>Item</th>
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<tbody>
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<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information
Rain Barrel Cost Request Form

City/County/Company Name: Seattle Conservation Corps
Contact Name: NA
Contact Email: NA
Contact Phone: 206-684-0190

Project Information
Project Name: Seattle Rain Barrels
Project Type (Public or Private):
Construction Date(s): 2011
Total Project Cost:
Funding Source (if Public Project):

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
Must be a Seattle resident to purchase rain barrels from this source.
Materials: recycled from the food industry (Greece or other Mediterranean countries)
190 liter barrels (~50 gallons) or 230-liter barrels (~60 gallons)
Includes drain valve, spigot and overflow, and mosquito screening for the lid.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$75</td>
<td>50-60 gallon, $15 delivery or free pick-up</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
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<tr>
<td>Annual O&amp;M (if known)</td>
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</tr>
</tbody>
</table>

Additional Notes or Information
### Rain Barrel Cost Request Form

**City/County/Company Name:** The Green Culture  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** 1-877-204-7332

**Project Information**

- **Project Name:** Aquaduct Rain Barrel  
- **Project Type (Public or Private):**  
- **Construction Date(s):** 2011  
- **Total Project Cost:**  
- **Funding Source (if Public Project):**  

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**
- Size: 23" round and 36" tall  
- Material: food grade polyethylene plastic  
- Includes brass spigot for attaching garden hose, threaded attachment for connecting hose below spigot, automatic overflow with 6 foot hose, and double screen inlet

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$260</td>
<td>54 gallon, does not inc. shipping ($55)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<td>Rain Barrel</td>
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<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
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</table>

### Additional Notes or Information
**Rain Barrel Cost Request Form**

**City/County/Company Name:** The Green Culture  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** 1-877-204-7336

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**Project Information**

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Channel Islands Rain Barrel</th>
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</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
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</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td></td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td></td>
</tr>
</tbody>
</table>

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

- Dimensions: 23”W x 18”D x 30” H
- Materials: Made from UV Protected Polyethylene
- Includes 4-ft garden hose, on/off hose valve, dual overflow on back of barrel, screened intake

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**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$195</td>
<td>47 gallon, does not inc. shipping ($45)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
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<td></td>
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</tbody>
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**Estimated Cost for Installed Facility**

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<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
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</tbody>
</table>

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**Additional Notes or Information**
Rain Barrel Cost Request Form

City/County/Company Name: The Green Culture
Contact Name: NA
Contact Email: NA
Contact Phone: 1-877-204-7336

**Project Information**

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Flora Sherwood Rain Barrel &amp; Planter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td></td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td></td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td></td>
</tr>
</tbody>
</table>

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

55 Gallon Rain Barrel doubles as planter
Includes 3/4 drain valve with garden hose threads and 1-1/2 hidden overflow
Size: 26” height x 26” width x 26” depth
Materials: Durable polyethelyne plastic

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**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$259</td>
<td>55 gallon, does not inc. shipping ($65)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
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</tbody>
</table>

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**Estimated Cost for Installed Facility**

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<tr>
<th>Item</th>
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</tr>
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<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
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<td></td>
</tr>
</tbody>
</table>

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**Additional Notes or Information**
## Rain Barrel Cost Request Form

### Project Information

- **Project Name:** The Green Culture
- **Contact Name:** NA
- **Contact Email:** NA
- **Contact Phone:** 1-877-204-7336
- **Project Type (Public or Private):** Public
- **Construction Date(s):** 2011
- **Total Project Cost:**
- **Funding Source (if Public Project):**

### Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

Size: 30 1/2"H x 22” Diameter (widest point)
Includes brass spigot and security screen

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$168</td>
<td>50 gallon, does not inc. shipping ($45)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
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</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
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</table>

### Additional Notes or Information
## Rain Barrel Cost Request Form

<table>
<thead>
<tr>
<th>City/County/Company Name:</th>
<th>The Green Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Name:</td>
<td>NA</td>
</tr>
<tr>
<td>Contact Email:</td>
<td>NA</td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>1-877-204-7336</td>
</tr>
</tbody>
</table>

### Project Information
- **Project Name:** Great American Rain Barrel
- **Project Type (Public or Private):**
- **Construction Date(s):** 2011
- **Total Project Cost:**
- **Funding Source (if Public Project):**

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

Size: 39"H x 24" Diameter  
Material: Recycled food-grade barrels  
Each individual unit comes complete with threaded spigot (for easy hose attachment), overflow fitting, drain plug, screw-on cover, and complete instructions.

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$166</td>
<td>60 gallon, does not inc. shipping ($55)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
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</table>

### Additional Notes or Information
**Rain Barrel Cost Request Form**

**City/County/Company Name:** The Green Culture  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** 1-877-204-7336  

**Project Information**  
**Project Name:** Mega Rain Barrel  
**Project Type (Public or Private):**  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**  

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**  
Size: 36”height x 27”width x 24”depth  
Materials: Virgin resin  
Includes reinforced screen inlets, internal overflow tube, bucket-high spigot

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$349</td>
<td>80 gallon, does not inc. shipping ($95)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
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</tbody>
</table>

**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
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<td></td>
</tr>
</tbody>
</table>

**Additional Notes or Information**
## Rain Barrel Cost Request Form

City/County/Company Name: The Green Culture  
Contact Name: NA  
Contact Email: NA  
Contact Phone: 1-877-204-7336  

### Project Information

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Niagara Falls Rain Barrel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type</td>
<td>Public or Private: Public</td>
</tr>
<tr>
<td>Construction Date(s)</td>
<td>2011</td>
</tr>
<tr>
<td>Total Project Cost</td>
<td></td>
</tr>
<tr>
<td>Funding Source</td>
<td></td>
</tr>
</tbody>
</table>

### Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):

- Size Dimensions: 22”W x 16”D x 32”H
- Materials: Durable, UV-stable polyethylene
- Includes removable debris screen, built-in 4-ft hose, and linking kit

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$177.50</td>
<td>50 gallon, does not inc. shipping ($45)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
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<td>per unit</td>
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</table>

### Additional Notes or Information
**Rain Barrel Cost Request Form**

City/County/Company Name: The Green Culture  
Contact Name: NA  
Contact Email: NA  
Contact Phone: 1-877-204-7336

---

**Project Information**

Project Name: Ocean Breeze Rain Barrel  
Construction Date(s): 2011  
Funding Source (if Public Project):  

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

- Size: 24 Diam. x 35 H (inches)
- Materials: recycled food-grade plastic resin
- Includes brass spigot and debris screen

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**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$127.50</td>
<td>55 gallon, does not include shipping ($40)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
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</tr>
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</table>

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**Additional Notes or Information**

-NA-
Rain Barrel Cost Request Form

City/County/Company Name: The Green Culture
Contact Name: NA
Contact Email: NA
Contact Phone: 1-877-204-7336

Project Information

Project Name: Prism Rain Barrel
Project Type (Public or Private): Rain Barrel
Construction Date(s): 2011
Total Project Cost: 
Funding Source (if Public Project): 

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
Size: 30” W x 30” L x 18” H (octagonal shape)
Composition: UV stabilized polyethylene
Includes 2 adjustable hose outlets, mosquito screen, 2 overflow ports with vent holes, and brass spigot

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$295</td>
<td>54 gallon, does not inc. shipping ($40)</td>
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</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

**Rain Barrel Cost Request Form**

**City/County/Company Name:** The Green Culture  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** 1-877-204-7336

---

**Project Information**

- **Project Name:** Shower Saver Rain Barrel  
- **Project Type (Public or Private):**  
- **Construction Date(s):** 2011  
- **Total Project Cost:**  
- **Funding Source (if Public Project):**

**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**

Size: 36" high, 23" diameter  
Composition: Made from UV protected, 3/16" thick polyethylene plastic  
Includes automatic overflow, brass spigot, hose converter fitting, and barrel plug

---

**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$260</td>
<td>54 gallon, does not inc. shipping ($55)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Estimated Cost for Installed Facility**

<table>
<thead>
<tr>
<th>Item</th>
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<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Additional Notes or Information**

---
Rain Barrel Cost Request Form

City/County/Company Name: The Green Culture
Contact Name: NA
Contact Email: NA
Contact Phone: 1-877-204-7336

Project Information

Project Name: The Rain Catcher
Project Type (Public or Private): NA
Construction Date(s): 2011
Total Project Cost: NA
Funding Source (if Public Project): NA

Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):
Size: 32” H x 24” W
Composition: made from recycled materials
Strong aluminum mesh screen (non-corrosive), overflow feature draws water down and out of the bottom front of barrel

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$170</td>
<td>54 gallon, does not inc. shipping ($45)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
**Rain Barrel Cost Request Form**

**City/County/Company Name:** The Green Culture  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** 1-877-204-7336

### Project Information

**Project Name:** Wood Grain Rain Barrel  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2011  
**Total Project Cost:**  
**Funding Source (if Public Project):**  
**Brief Project Description (include number of rain barrels, storage volume, and material [polyethylene, etc.]):**
- Size: 33\" Tall x 23\" Wide x 18\" Deep  
- Composition: UV stabilized plastic resin  
- Includes screen at top to keep out debris, spigot, shut off value for hose hook up, and overflow port  
- Optional Link Kit ($34.25) allows linkage to other barrels for increased water storage capacity.  
- Optional Barrel Stand ($72.90 + $20 shipping) creates larger offset between the spigot and the ground, making it easier to fill watering cans and for general use.

### Estimated Costs per Facility Component

<table>
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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td>$215</td>
<td>50 gallon, does not inc. shipping ($45)</td>
</tr>
<tr>
<td>Gutter Connection</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Cost for Installed Facility

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain Barrel</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Notes or Information
Wet Ponds
City/County/Company Name: City of Bellingham
Contact Name: William M. Reilly
Contact Email: wreilly@cob.org
Contact Phone: 360-778-7955

Project Information
Project Name: Northridge Sand Filter Detention Pond
Project Type (Public or Private): Public
Construction Date(s): 2008 (August/September)
Total Project Cost: $300,550
Funding Source (if Public Project): SSWU

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):
Project converted an existing dry detention pond to a sand filter and detention pond. Sand filter used for removal of phosphorus in Lake Whatcom. Project costs include $40,000 for land to expand foot print of facility. Inlet and Outlet structures for detention reused.

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.44</td>
<td>1,200 cy @$12/cy</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td>$1.11</td>
<td>Sod 450 sy @$10/sy</td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Pond</td>
<td>square feet</td>
<td>$21.02</td>
<td>14,300 sf</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td>$4.06</td>
<td>$58,000 total</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information
Grading and planting of adjacent one acre field included in cost. It was a part of a contract with the landowner for property transaction. Estimated cost $20,000. This project was complicated by the City needing to deal with a homeowners association to trade property purchased by the City for 40 k with land immediately adjacent to the existing pond.
Wet Pond Cost Request Form

City/County/Company Name: City of Lacey
Contact Name: Doug Christenson
Contact Email: dchriste@ci.lacey.wa.us
Contact Phone: 360-438-2686

Project Information
Project Name: 2011 Street Overlay Project
Project Type (Public or Private): Public
Construction Date(s): 2011
Total Project Cost: NA
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$1.30</td>
<td>Pond excavation inc. haul</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td>$0.10</td>
<td>Seeding, fertilizing, and mulching</td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td>$6.74</td>
<td>Quarry spalls, assumes 1.4 TN/CY</td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td>$1,050</td>
<td>Catch Basin Type 1</td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td>$2,465</td>
<td>Catch Basin Type 2 - 48 In. Diam</td>
</tr>
<tr>
<td>Seal</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Pond</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Notes or Information

Excavation = $35/CY (pond excavation including haul)
Seeding, fertilizing, and mulching = $4,400 per acre
Quarry spalls = $130/TN
City/County/Company Name: Seattle Public Utilities
Contact Name: Emiko Takahashi
Contact Email: emiko.takahashi@seattle.gov
Contact Phone: (206) 615-1695

Project Information
Project Name: Norfolk - MLK Way Sub-basin Stormwater Improvements Project
Project Type (Public or Private): Public
Construction Date(s): 2006 (report date)
Total Project Cost: $4,424,000 (estimated)
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):
This cost estimate came from the Norfolk - MLK Way Sub-basin Stormwater Improvements Project Development Plan for the recommended treatment option (Treatment Option B: Construct a deep wet pond on the City-owned property west of I-5):
- 8-foot deep, 2-cell wet pond
- 7.3 acre-ft capacity
- High flow bypass

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$1.48</td>
<td>Includes excavation, haul, and disposal</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td>$0.21</td>
<td>Hydroseeding on pond slopes above WSE</td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td>$2.96</td>
<td>Quarry spalls</td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td>$13,500</td>
<td>Pond outlet (Type 204A manhole)</td>
</tr>
<tr>
<td>Seal</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$1.56</td>
<td>Topsoil, type A</td>
</tr>
<tr>
<td>Woody Shrubs</td>
<td>each</td>
<td>$19</td>
<td>Plantings at pond fringe</td>
</tr>
<tr>
<td>Bird Exclusion Netting</td>
<td>acre</td>
<td>$25,000</td>
<td>Over pond maximum WSE</td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Pond</td>
<td>cubic feet</td>
<td>$10.64</td>
<td>Based on 317,988 CF (7.3 acre-ft)</td>
</tr>
<tr>
<td>Design</td>
<td>cubic feet</td>
<td>$0.52</td>
<td>Based on $165,000 consultant design cost</td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>cubic feet</td>
<td>$0.025</td>
<td>Does not include dredging (every 10-25 yrs)</td>
</tr>
</tbody>
</table>

Additional Notes or Information

Excavation = $40/CY
Mineral aggregate (Type 17) for maintenance access road and bottom of first pond cell = $31/CY
Quarry spalls (for erosion control spillway) = $47/TN, assumes 1.7 TN/CY
Topsoil (Type A) = $42/CY
# Wet Pond Cost Request Form

**City/County/Company Name:** Thurston County  
**Contact Name:** Scott Lindblom  
**Contact Email:** lindbls@co.thurston.wa.us  
**Contact Phone:** 360-786-5133

## Project Information

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>Mallard Pond Wetland Enhancement Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Type (Public or Private):</td>
<td>Public</td>
</tr>
<tr>
<td>Construction Date(s):</td>
<td>2005</td>
</tr>
<tr>
<td>Total Project Cost:</td>
<td>$543,336</td>
</tr>
<tr>
<td>Funding Source (if Public Project):</td>
<td>NA</td>
</tr>
</tbody>
</table>

## Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):

Project increased the size of the existing stormwater pond and constructed two new ponds in the 200-foot buffer of the Mallard Pond wetlands. Existing size and capacity = 20,000sf and 91,500cf. New size and capacity = 47,000sf and 178,600cf. Added size and capacity = 27,000sf and 87,100cf.

## Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal</td>
<td>square feet</td>
<td></td>
<td></td>
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## Estimated Cost for Installed Facility

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<th>Item</th>
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<th>Unit Cost</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Wet Pond</td>
<td>cubic feet</td>
<td>$6.24</td>
<td>87,100 cf (added capacity), inc. plantings</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Additional Notes or Information

Wet pond cost = $20.12 per SF or $6.24 per CF
**Wet Pond Cost Request Form**

**City/County/Company Name:** Thurston County  
**Contact Name:** Scott Lindblom  
**Contact Email:** lindbls@co.thurston.wa.us  
**Contact Phone:** 360-786-5133

---

**Project Information**

**Project Name:** Thompson Place - Phase 1 - 3  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2004  
**Total Project Cost:** $644,575  
**Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):**  
Regional pond (37,300 cf of storage), total cost for Phases 1 - 3 is $644,575

---

**Estimated Costs per Facility Component**

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</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal</td>
<td>square feet</td>
<td></td>
<td></td>
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</tbody>
</table>

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**Estimated Cost for Installed Facility**

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Pond</td>
<td>cubic feet</td>
<td>$17.28</td>
<td>37,300 cf retention pond, inc. 3 phases</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Additional Notes or Information**
**Wet Pond Cost Request Form**

**City/County/Company Name:**  
**Contact Name:**  
**Contact Email:**  
**Contact Phone:**  

---

### Project Information

**Project Name:**  
SR 18 Maple Valley to Issaquah Hobart Road - Basin CR-1  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2003  
**Total Project Cost:** $8,170,000 (stormwater treatment component of SR-18 project)  
**Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):**

- Construction Cost $197,597  
- Right of Way Cost $904,100  
- Structure Footprint 1.69 acre  
- Capacity 59,044 cu ft  
- Impervious Area Treated 3.69 acre ($6.85/sq ft of impervious area)  
- Total Drainage Area 4.32 acre

---

### Estimated Costs per Facility Component

<table>
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<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td>$0.28</td>
<td>Overexcavation inc. haul</td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td>$0.02</td>
<td>Seeding, fertilizing, and mulching</td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td>$0.73</td>
<td>Quarry spalls, assumes 1.4 TN/CY</td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal</td>
<td>square feet</td>
<td>$0.56</td>
<td>Geosynthetic clay liner</td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td>$0.30</td>
<td>Topsoil, Class B</td>
</tr>
<tr>
<td>Debris Cage</td>
<td>each</td>
<td>$1,250</td>
<td></td>
</tr>
</tbody>
</table>

---

### Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Pond</td>
<td>cubic feet</td>
<td>$3.34</td>
<td>$59,044 CF wet pond, does not inc. ROW cost</td>
</tr>
<tr>
<td>Design</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Additional Notes or Information

- Pond overexcavation inc. haul = $7.50/CY  
- Geosynthetic clay liner = $5/SY  
- Seeding, fertilizing, and mulching = $800/acre  
- Topsoil, Class B = $8/CY  
- Quarry spalls = $14.05/TN
**City/County/Company Name:** WSDOT  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** NA

### Project Information

- **Project Name:** SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-10  
- **Project Type (Public or Private):** Public  
- **Construction Date(s):** 2003  
- **Total Project Cost:** $8,170,000 (stormwater treatment component of SR-18 project)  
- **Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):**

- Construction Cost $ 363,478  
- Right of Way Cost $ 196,900  
- Structure Footprint 2.05 acre  
- Capacity 101,451 cu ft  
- Impervious Area Treated 3.54 acre ($3.63/sq ft of impervious area)  
- Total Drainage Area 8.63 acre

### Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
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<tr>
<td>Grass</td>
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<tr>
<td>Gravel</td>
<td>cubic feet</td>
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<tr>
<td>Inlet Structure</td>
<td>per unit</td>
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<tr>
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<tr>
<td>Seal</td>
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<tr>
<td>Soil/Planting Media</td>
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### Estimated Cost for Installed Facility

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<tr>
<td>Annual O&amp;M (if known)</td>
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### Additional Notes or Information
**Wet Pond Cost Request Form**

City/County/Company Name: WSDOT  
Contact Name: NA  
Contact Email: NA  
Contact Phone: NA  

**Project Information**

Project Name: SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-11  
Project Type (Public or Private): Public  
Construction Date(s): 2003  
Total Project Cost: $8,170,000 (stormwater treatment component of SR-18 project)  
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):

- Construction Cost $230,814  
- Right of Way Cost $129,800  
- Structure Footprint 1.06 acre  
- Capacity 29,820 cu ft  
- Impervious Area Treated 1.31 acre ($6.32/sq ft of impervious area)  
- Total Drainage Area 1.97 acre

**Estimated Costs per Facility Component**

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<th>Item</th>
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**Additional Notes or Information**
Wet Pond Cost Request Form

City/County/Company Name: WSDOT
Contact Name: NA
Contact Email: NA
Contact Phone: NA

Project Information

Project Name: SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-12
Project Type(s): Public
Construction Date(s): 2003
Total Project Cost: $8,170,000 (stormwater treatment component of SR-18 project)
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):

Construction Cost $137,131
Structure Footprint 0.42 acre
Capacity 27,832 cu ft
Impervious Area Treated 1.01 acre ($3.12/sq ft of impervious area)
Total Drainage Area 2.37 acre

Estimated Costs per Facility Component

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Additional Notes or Information
Wet Pond Cost Request Form

City/County/Company Name: WSDOT
Contact Name: NA
Contact Email: NA
Contact Phone: NA

Project Information
Project Name: SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-13
Project Type (Public or Private): Public
Construction Date(s): 2003
Total Project Cost: $8,170,000 (stormwater treatment component of SR-18 project)
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):
Construction Cost $ 130,197
Structure Footprint 0.42 acre
Capacity 25,075 cu ft
Impervious Area Treated 0.73 acre ($4.09/sq ft of impervious area)
Total Drainage Area 2.4 acre

Estimated Costs per Facility Component

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Additional Notes or Information
# Wet Pond Cost Request Form

**City/County/Company Name:**

WSDOT

**Contact Name:**

NA

**Contact Email:**

NA

**Contact Phone:**

NA

## Project Information

**Project Name:**

SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-15

**Project Type (Public or Private):**

Public

**Construction Date(s):**

2003

**Total Project Cost:**

$8,170,000 (stormwater treatment component of SR-18 project)

**Funding Source (if Public Project):**

NA

**Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):**

Construction Cost $ 75,659  
Structure Footprint 0.33 acre  
Capacity 17,070 cu ft  
Impervious Area Treated 2.63 acre ($0.66/sq ft of impervious area)  
Total Drainage Area 4.35 acre

## Estimated Costs per Facility Component

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## Additional Notes or Information

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# Wet Pond Cost Request Form

**City/County/Company Name:** WSDOT  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** NA

## Project Information

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<td>Project Type (Public or Private):</td>
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<td>Funding Source (if Public Project):</td>
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**Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):**

- Construction Cost $ 480,963
- Right of Way Cost $ 284,700
- Structure Footprint 2.05 acre
- Capacity 108,753 cu ft
- Impervious Area Treated 5.2 acre ($3.38/sq ft of impervious area)
- Total Drainage Area 8.71 acre

## Estimated Costs per Facility Component

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<td>Annual O&amp;M (if known)</td>
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## Additional Notes or Information
Wet Pond Cost Request Form

City/County/Company Name: WSDOT
Contact Name: NA
Contact Email: NA
Contact Phone: NA

Project Information
Project Name: SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-1N
Project Type (Public or Private): Public
Construction Date(s): 2003
Total Project Cost: $8,170,000 (stormwater treatment component of SR-18 project)
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):
Construction Cost $64,460
Right of Way Cost $60,500
Structure Footprint 0.22 acre
Capacity 10,770 cu ft
Impervious Area Treated 1.53 acre ($1.87/sq ft of impervious area)
Total Drainage Area 3.62 acre

Estimated Costs per Facility Component

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Additional Notes or Information
**Wet Pond Cost Request Form**

City/County/Company Name: WS DOT
Contact Name: NA
Contact Email: NA
Contact Phone: NA

### Project Information

**Project Name:** SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-15
**Project Type (Public or Private):** Public
**Construction Date(s):** 2003
**Total Project Cost:** $8,170,000 (stormwater treatment component of SR-18 project)
**Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):**
- Construction Cost $34,003
- Right of Way Cost $183,150
- Structure Footprint 0.13 acre
- Capacity 1,170 cu ft
- Impervious Area Treated 0.23 acre ($21.67/sq ft of impervious area)
- Total Drainage Area 0.23 acre

### Estimated Costs per Facility Component

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### Additional Notes or Information


Wet Pond Cost Request Form

City/County/Company Name: WSDOT
Contact Name: NA
Contact Email: NA
Contact Phone: NA

Project Information
Project Name: SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-3
Project Type (Public or Private): Public
Construction Date(s): 2003
Total Project Cost: $8,170,000 (stormwater treatment component of SR-18 project)
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):
- Construction Cost $673,913
- Right of Way Cost $236,900
- Structure Footprint 2.72 acre
- Capacity 202,733 cu ft
- Impervious Area Treated 6.26 acre ($3.34/sq ft of impervious area)
- Total Drainage Area 15.94 acre

Estimated Costs per Facility Component

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<tr>
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<tr>
<td>Dewatering</td>
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Estimated Cost for Installed Facility

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<td>Annual O&amp;M (if known)</td>
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Additional Notes or Information
# Wet Pond Cost Request Form

**City/County/Company Name:** WSDOT  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** NA

## Project Information

**Project Name:** SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-4  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2003  
**Total Project Cost:** $8,170,000 (stormwater treatment component of SR-18 project)  
**Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):**

- Construction Cost $314,775
- Right of Way Cost $22,520
- Structure Footprint 1.52 acre
- Capacity 100,633 cu ft
- Impervious Area Treated 3.88 acre ($2.00/sq ft of impervious area)
- Total Drainage Area 8.78 acre

## Estimated Costs per Facility Component

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<th>Item</th>
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<th>Unit Cost</th>
<th>Notes</th>
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<tr>
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</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
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</tr>
<tr>
<td>Grass</td>
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</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
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<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td></td>
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<tr>
<td>Outlet Structure</td>
<td>per unit</td>
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<td>Seal</td>
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<tr>
<td>Soil/Planting Media</td>
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## Estimated Cost for Installed Facility

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## Additional Notes or Information


**Wet Pond Cost Request Form**

**City/County/Company Name:** WSDOT  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** NA

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### Project Information

**Project Name:** SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-6  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2003  
**Total Project Cost:** $8,170,000 (stormwater treatment component of SR-18 project)  
**Funding Source (if Public Project):** NA

---

**Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):**

- Construction Cost $226,629
- Right of Way Cost $313,000
- Structure Footprint 1.47 acre
- Capacity 55,165 cu ft
- Impervious Area Treated 2.22 acre ($5.58/sq ft of impervious area)
- Total Drainage Area 3.67 acre

---

### Estimated Costs per Facility Component

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<th>Item</th>
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<th>Unit Cost</th>
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<tr>
<td>Grading/finishing</td>
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<td>Grass</td>
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<td>Gravel</td>
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### Estimated Cost for Installed Facility

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<tr>
<td>Annual O&amp;M (if known)</td>
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### Additional Notes or Information
Wet Pond Cost Request Form

City/County/Company Name: WSDOT
Contact Name: NA
Contact Email: NA
Contact Phone: NA

Project Information

Project Name: SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-7
Project Type (Public or Private): Public
Construction Date(s): 2003
Total Project Cost: $8,170,000 (stormwater treatment component of SR-18 project)
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):
- Construction Cost $357,951
- Right of Way Cost $333,300
- Structure Footprint 1.11 acre
- Capacity 81,917 cu ft
- Impervious Area Treated 3.62 acre ($4.38/sq ft of impervious area)
- Total Drainage Area 5.37 acre

Estimated Costs per Facility Component

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<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
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<tr>
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<td></td>
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<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
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<tr>
<td>Grass</td>
<td>square feet</td>
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</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
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<td>Inlet Structure</td>
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<td>Outlet Structure</td>
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<tr>
<td>Seal</td>
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<tr>
<td>Soil/Planting Media</td>
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Estimated Cost for Installed Facility

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<tr>
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Additional Notes or Information
Wet Pond Cost Request Form

City/County/Company Name: WSDOT
Contact Name: NA
Contact Email: NA
Contact Phone: NA

Project Information

Project Name: SR 18 Maple Valley to Issaquah Hobart Road - Basin TC-8
Project Type (Public or Private): Public
Construction Date(s): 2003
Total Project Cost: $8,170,000 (stormwater treatment component of SR-18 project)
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):
Construction Cost $ 282,961
Right of Way Cost $ 127,000
Structure Footprint 1.12 acre
Capacity 87,007 cu ft
Impervious Area Treated 3.44 acre ($2.74/sq ft of impervious area)
Total Drainage Area 6.42 acre

Estimated Costs per Facility Component

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<tr>
<td>Grading/finishing</td>
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<td></td>
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<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
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<td></td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
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<td></td>
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<tr>
<td>Outlet Structure</td>
<td>per unit</td>
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<tr>
<td>Seal</td>
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<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
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<td>Dewatering</td>
<td>lump sum</td>
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Estimated Cost for Installed Facility

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<tr>
<td>Annual O&amp;M (if known)</td>
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Additional Notes or Information
Wet Pond Cost Request Form

City/County/Company Name: WSDOT
Contact Name: NA
Contact Email: NA
Contact Phone: NA

Project Information
Project Name: SR 18 – 180th to Maple Valley - Detention Pond A
Project Type (Public or Private): Public
Construction Date(s): 2001
Total Project Cost: $2,225,000 (stormwater treatment component of SR-18 project)
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):
- Pond Cost $100,500
- Structure Footprint 0.345 acre
- Capacity 60,113 cu ft
- Impervious Area Treated 11.2 acre ($0.21/sq ft of impervious area)
- Total Drainage Area 17.4 acre

Estimated Costs per Facility Component

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<td>Grading/finishing</td>
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<td>Grass</td>
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<tr>
<td>Seal</td>
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<tr>
<td>Soil/Planting Media</td>
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Estimated Cost for Installed Facility

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<td>square feet</td>
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Additional Notes or Information
- Seeding, fertilizing, and mulching = $780/acre
- Quarry spalls = $20/TN
### Project Information

**Project Name:** SR 18 – 180th to Maple Valley - Detention Pond B  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2001  
**Total Project Cost:** $2,225,000 (stormwater treatment component of SR-18 project)  
**Funding Source (if Public Project):** NA  

**Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):**
- Pond Cost $136,000  
- Structure Footprint 0.190 acre  
- Capacity 33,106 cu ft  
- Impervious Area Treated 3.8 acre ($0.82/sq ft of impervious area)  
- Total Drainage Area 10.9 acre

### Estimated Costs per Facility Component

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<td>Grass</td>
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<td>Soil/Planting Media</td>
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### Estimated Cost for Installed Facility

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### Additional Notes or Information
**Wet Pond Cost Request Form**

**City/County/Company Name:** WSDOT  
**Contact Name:** NA  
**Contact Email:** NA  
**Contact Phone:** NA  

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**Project Information**

**Project Name:** SR 18 – 180th to Maple Valley - Detention Pond G  
**Project Type (Public or Private):** Public  
**Construction Date(s):** 2001  
**Total Project Cost:** $2,225,000 [stormwater treatment component of SR-18 project]  
**Funding Source (if Public Project):** NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):

- Pond Cost $237,000  
- Structure Footprint 0.24 acre  
- Capacity 42,263 cu ft  
- Impervious Area Treated 3.0 acre ($1.81/sq ft of impervious area)  
- Total Drainage Area 8.4 acre

---

**Estimated Costs per Facility Component**

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<tr>
<th>Item</th>
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<tr>
<td>Grass</td>
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<td>Gravel</td>
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**Estimated Cost for Installed Facility**

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**Additional Notes or Information**
Wet Pond Cost Request Form

City/County/Company Name: WSDOT
Contact Name: NA
Contact Email: NA
Contact Phone: NA

Project Information

Project Name: SR 18 – 180th to Maple Valley - Detention Pond H
Project Type (Public or Private): Public
Construction Date(s): 2001
Total Project Cost: $2,225,000 (stormwater treatment component of SR-18 project)
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):
- Pond Cost $143,000
- Structure Footprint 0.33 acre
- Capacity 57,935 cu ft
- Impervious Area Treated 15.7 acre ($0.21/sq ft of impervious area)
- Total Drainage Area 53.8 acre

Estimated Costs per Facility Component

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<th>Unit Cost</th>
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<td>Grading/finishing</td>
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<td>Grass</td>
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<tr>
<td>Gravel</td>
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<td>Seal</td>
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<tr>
<td>Soil/Planting Media</td>
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Estimated Cost for Installed Facility

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Additional Notes or Information
Wet Pond Cost Request Form

City/County/Company Name: WSDOT
Contact Name: NA
Contact Email: NA
Contact Phone: NA

Project Information
Project Name: SR 18 – 180th to Maple Valley - Detention Pond J
Project Type (Public or Private): Public
Construction Date(s): 2001
Total Project Cost: $2,225,000 [stormwater treatment component of SR-18 project]
Funding Source (if Public Project): NA

Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):
- Pond Cost $49,500
- Structure Footprint 0.34 acre
- Capacity 58,370 cu ft
- Impervious Area Treated 6.4 acre ($0.18/sq ft of impervious area)
- Total Drainage Area 24.2 acre

Estimated Costs per Facility Component

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gravel</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outlet Structure</td>
<td>per unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal</td>
<td>square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil/Planting Media</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Estimated Cost for Installed Facility

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Pond</td>
<td>cubic feet</td>
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<td>58,370 CF detention pond</td>
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<tr>
<td>Design</td>
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</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
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</tbody>
</table>

Additional Notes or Information
**Wet Pond Cost Request Form**

**City/County/Company Name:** WSDOT
**Contact Name:** NA
**Contact Email:** NA
**Contact Phone:** NA

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**Project Information**

**Project Name:** SR 18 – 180th to Maple Valley - Detention Pond M
**Project Type (Public or Private):** Public
**Construction Date(s):** 2001
**Total Project Cost:** $2,225,000 (stormwater treatment component of SR-18 project)
**Funding Source (if Public Project):** NA

**Brief Project Description (include number and types of BMPs installed, live and dead storage capacity of wet ponds):**
- Pond Cost $218,000
- Structure Footprint 0.76 acre
- Capacity 131,551 cu ft
- Impervious Area Treated 7.4 acre ($0.68/sq ft of impervious area)
- Total Drainage Area 18.5 acre

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**Estimated Costs per Facility Component**

<table>
<thead>
<tr>
<th>Item</th>
<th>Units</th>
<th>Unit Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td>cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grading/finishing</td>
<td>square feet</td>
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<td>square feet</td>
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<tr>
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**Estimated Cost for Installed Facility**

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<th>Item</th>
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<th>Unit Cost</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Wet Pond</td>
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<tr>
<td>Design</td>
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</tr>
<tr>
<td>Annual O&amp;M (if known)</td>
<td>square feet</td>
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**Additional Notes or Information**

