



Fiscal Year 2012 Statewide Stormwater Grant Program Application

**This FY 2012 Statewide Stormwater Grant Program
Application Form is available at:**

<http://www.ecy.wa.gov/programs/wq/funding/funding.html>

Related resource information immediately follows the application.

To ask about the availability of this document in a format for the visually impaired, call the Water Quality Program at 360-407-6502. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

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APPLICATION INSTRUCTIONS

The Application

The fiscal year 2012 (FY 2012) Statewide Stormwater Grant Program Application is to be used by eligible cities, towns, counties and ports covered by the National Pollutant and Discharge Elimination (NPDES) Phase I and II Municipal Stormwater permits for the FY 2012 competitive stormwater grant program. Please complete all required sections of the application. The Department of Ecology (Ecology) will not consider incomplete applications for funding.

Part 1 of the application requests background information on the applicant, the project area, project type, and funding request. Part 2 of the application requests detailed information on the project, water quality problem being addressed, scope of work, and project budget.

Application Resources

An overview of the funding program, funding ceilings, required match and a list of eligible projects can be found in the *FY 2012 Statewide Stormwater Grant Program Funding Guidelines*. A copy of the funding guidelines can be found at:

<http://www.ecy.wa.gov/programs/wq/funding/FundingPrograms/OtherFundingPrograms/StWa12a/FY12aStWa.html>

Ecology's Water Quality staff are available to provide clarification and answer questions regarding the funding program, process, and requirements. You can find Ecology staff contact information and a list of useful web links on the following page.

Tie Breakers

Ecology will break ties of overall total points in the evaluation of projects using the score for Question 3 – Severity of Problem, Stormwater Quality, or Hydrologic Improvements. For example, if two projects have the same total points, Ecology will place the project that scores higher in Question 3 above the other on the funding priority list. Ecology will use the score from Question 7 - Readiness to Proceed, if the tie cannot be broken using Question 3.

Application Submittal Information

Applications must include all of the following:

- One application with an original signature.
- Two paper copies of the signed original.
- One electronic version of the application in MS WORD format on CD ROM (maps and other attachments to the application can be submitted in PDF format with the electronic version).

All application materials **must be received** at the Department of Ecology (Lacey headquarters office) **no later than 5:00 p.m. on Friday, November 18, 2011**. Postmarks and faxed applications will not be accepted.

U.S. Postal Mailing Address:

Department of Ecology
Water Quality Program
Financial Management Section
P.O. Box 47600
Olympia, WA 98504-7600

Overnight Mail or Hand Delivery Address:

Department of Ecology
Water Quality Program
Financial Management Section
300 Desmond Drive
Lacey, WA 98503

Ecology Staff Contact Information

<p>Ecology Regional Office Contacts:</p>	<p>Central Regional Office (CRO), 509-575-2490 Terry Wittmeier, 509-574-3991 e-mail terry.wittmeier@ecy.wa.gov</p> <p>Eastern Regional Office (ERO), 509-329-3400 David Duncan, 509-329-3554 e-mail david.duncan@ecy.wa.gov</p> <p>Northwest Regional Office (NWRO), 425-649-7000 Denise Di Santo, 425-649-7263 e-mail denise.disanto@ecy.wa.gov</p> <p>Melisa Snoeberger, 425-649-7047 e-mail melisa.snoeberger@ecy.wa.gov</p> <p>Southwest Regional Office (SWRO), 360-407-6300 Randy Anhorn, 360-690-4782 e-mail randy.anhorn@ecy.wa.gov</p>
<p>Financial Assistance - General: (Lacey Headquarters)</p> <p>Engineer and Technical Questions: (Lacey Headquarters)</p>	<p>Patricia Brommer, 360-407-6216 e-mail patricia.brommer@ecy.wa.gov</p> <p>Steve Carley, 360-407-6572 e-mail steve.carley@ecy.wa.gov</p> <p>Doug Howie, 360-407- 6444, e-mail douglas.howie@ecy.wa.gov</p>

HELPFUL WEBLINKS

This section provides information about resources that may help you prepare a successful application.

Ecology cannot guarantee web site accuracy or continued maintenance of non-Ecology web sites. Ecology does not endorse non-Ecology web sites.

Ecology's Water Quality Program:

<http://www.ecy.wa.gov/programs/wq/wqhome.html>

Ecology's Water Quality Program Funding Information:

<http://www.ecy.wa.gov/programs/wq/funding/funding.html>

SFY 2013 State Revolving Fund and Centennial Funding Cycle Information:

<http://www.ecy.wa.gov/programs/wq/funding/cycles/2013/index.html>

Conversion from degrees, minutes, and seconds to decimal degrees:

<http://www.directionsmag.com/site/latlong-converter>

Green Infrastructure approaches to managing wet weather with State Revolving Funds:

http://www.epa.gov/owm/cwfinance/cwsrf/green_if.pdf

Low Impact Development Technical Guidance Manual for Puget Sound:

http://www.psparchives.com/publications/our_work/stormwater/lid/LID_manual2005.pdf

Stormwater Management Manuals:

<http://www.ecy.wa.gov/programs/wq/stormwater/tech.html>

LISTSERV for Ecology's Water Quality Program:

<http://listserv.wa.gov/cgi-bin/wa?A0=ECOLOGY-WATER-QUALITY-INFO>

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Part 1

FY 2012 Statewide Stormwater Grant Program Application

For Ecology Use Only:

Application No. _____

Place the cursor in the gray box at question 1, fill in the answer, and then use the F11 function key to navigate through the remaining questions in the application.

1. PROJECT TITLE: *(Please keep the project title to five words or less.)*

Stormwater Retrofit – Bloedel Donovan Park

2. APPLICANT NAME: *(Eligible public body)*

City of Bellingham Parks and Recreation, Design and Development Division

3. APPLICANT FEDERAL IDENTIFICATION NUMBER:

Federal ID No.: 91-6001229

4. APPLICANT SIGNATORY: *(The person whose name is listed here must sign Part 1 -Box 14 of this application)*

Name: Mayor Dan Pike

Title: Mayor

Telephone Number: 360-778-8100

E-Mail Address: dpike@cob.org

Fax Number: 360-778-8101

Mailing Address

Agency: City of Bellingham

Address: 210 Lottie Street

City: Bellingham State: WA Zip Code: 98225

5. APPLICANT PROJECT MANAGER: *(The person whose name is listed is the main contact for the project)*

Name: Gina Gobo Austin, PE

Title: Project Engineer

Telephone Number: 360-778-7000

E-Mail Address: gaustin@cob.org

Fax Number: 360-778-7001

Mailing Address

Agency: City of Bellingham Parks and Recreation Design and Development Division

Address: 3424 Meridian Street

City: Bellingham State: WA Zip Code: 98225

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6. PROJECT INFORMATION:

What is the population served by the Project? 95,000 What is the population served by the System? 95,000

Is a map of the PROJECT location included with the application? ☒ Yes ☐ No

Note: The map should identify the primary location of the PROJECT and show its relationship to affected water bodies. Also include the location of other projects funded by Ecology that are adjacent to this PROJECT.

Is the PROJECT located in the Puget Sound basin (WRIA 1-19)? ☒ Yes ☐ No

Is the PROJECT located in a basin with salmonid stocks listed as threatened or endangered in accordance with the Endangered Species Act? ☒ Yes ☐ No

<http://www.nwr.noaa.gov/ESA-Salmon-Listings/Index.cfm>

Is the PROJECT statewide? ☐ Yes ☒ No

If **NO**, list below all of the county(ies), Water Resource Inventory Area designation(s) (WRIA), Legislative district(s), and Congressional district(s) where at least five percent of the PROJECT will be accomplished.

Note: You must select a primary location and then provide additional location information as applicable. All separate designations (County, Legislative District, Congressional District, and WRIA) must equal 100 percent (list from greatest to least percentage, and please break any ties by at least one percentage point). Limit your separate Legislative Districts and Congressional Districts to those that cover greater than five percent of the project area.

County(ies) for the Project:

Name	Percent
Whatcom	100
Total	100

WRIA(s) for the PROJECT:

<http://www.ecy.wa.gov/apps/watersheds/wriapages/index.html>

Water Resource Inventory Area	Percent
Nooksack, 1	100
Total	100

12-Digit HUC Code for the PROJECT:

<http://viewer.nationalmap.gov/viewer/nhd.html?p=nhd>

Hydrologic Unit Code	Percent
12-171100040602	100
Total	100

Congressional District(s) for the PROJECT:

<http://apps.leg.wa.gov/DistrictFinder/default.aspx?city=&street=&zip=>

Number	Percent
2nd	100
Total	100

Legislative District(s) for the PROJECT:

<http://apps.leg.wa.gov/DistrictFinder/default.aspx?city=&street=&zip=>

Name	Percent
40th	100
Total	100

Latitude/Longitude for the PROJECT:

Provide **coordinates in Decimal Degrees** (e.g., 45.3530/-120.4510) of PROJECT location. The PROJECT location is the approximate center of where you will be working. Facilities projects should report the outfall location or center of the land application site. Latitude/Longitude coordinates can be located at:
<http://itouchmap.com/latlong.html>

Project Location	Lat	Long
Primary	48.7617	-122.4186

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7. WATER BODY AND WATER QUALITY NEEDS ADDRESSED BY THE PROJECT:

Is the affected water body listed on the Clean Water Act Section 303(d) List as impaired? Yes ☒ No ☐
<http://apps.ecy.wa.gov/wqawa/viewer.htm>

If yes, what is the 303(d)-listing parameter(s) and associated identification number(s)? Lake Whatcom: Dissolved Oxygen, 5846; Whatcom Creek: Fecal Coliform, 39160; Dissolved Oxygen, 39033

Does the PROJECT cover a priority area addressed in the Puget Sound Partnership Action Agenda?

Yes ☒ No ☐

The Puget Sound Partnership Action Agenda can be found at: http://www.psp.wa.gov/aa_action_agenda.php

If yes, provide the name of priority area. Lake Whatcom Watershed

Check all type(s) of water bodies that this PROJECT targets:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Freshwater rivers | <input type="checkbox"/> Direct marine water |
| <input checked="" type="checkbox"/> Freshwater lakes | <input type="checkbox"/> Saltwater estuary |
| <input type="checkbox"/> Freshwater wetlands | <input type="checkbox"/> Other (specify) _____ |
| <input type="checkbox"/> Ground water | |

Check all boxes that apply for this PROJECT:

- ☐ Endangered salmonids
- ☐ Threatened salmonids
- ☐ Other Endangered Species Act protected species (identify) _____
- ☐ Protection of shellfish habitat <http://www.doh.wa.gov/ehp/sf/Pubs/annual-inventory.pdf>
- ☒ Protection of domestic water supply <http://www.doh.wa.gov/ehp/dw/sentry.htm>
- ☒ TMDL requirements <http://www.ecy.wa.gov/programs/wq/tmdl/index.html>
- ☒ NPDES requirements
- ☐ Other (specify) _____

8. PROJECT DURATION:

Estimated Start Date: April 1, 2012

Estimated Completion Date: July 1, 2013

PROJECT Length: 15 months

Note: Projects funded by the FY 2012 Statewide Stormwater Grant Program must be completed by June 30, 2015. The project type and scope of work will determine the project duration during funding agreement negotiations. Most projects take three years or less to complete.

9. PROJECT TYPE:

- ☐ 1. Retrofit an existing stormwater facility.
- ☒ 2. Install accepted Low-Impact Development (LID) techniques.
- ☒ 3. Retrofit project with LID components.
- ☐ 4. New or retrofit construction of Vactor Waste Facility.
- ☐ 5. Installation of pre-treatment/oil control facilities upstream of existing drywells.
- ☐ 6. Stormwater quality treatment and flow control to reduce stormwater flows to combined sewers.
- ☐ 7. Installation of TAPE-approved General Use Level Designation treatment technologies.

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☐ 8. Other, please provide description.

10. PLANNING AND DESIGN STATUS

Is this project ready to construct? Yes ☐ No ☒

If yes, are designs 100% complete and included with the application packet? Yes ☐ No ☒

Is this is a design/construct project? Yes ☐ No ☒

If yes, what percentage are the designs complete? 30 percent complete designs
(enter the percent complete above)

11. FUNDING REQUEST: (Provide the amount of funding requested to complete your project.)

Check for consistency with costs provided in Part 2, Question 2.	Project Amount & Terms:															
Total PROJECT Cost This amount represents the full cost of the PROJECT (including non-stormwater components).	<u>\$512,000</u>															
Eligible PROJECT Cost This amount represents the stormwater-related portion of the project costs that are grant eligible. <i>Contact Ecology staff with any eligibility questions.</i>	<u>\$512,000</u>															
<i>Ecology Funding Request</i> <i>This amount represents the portion that Ecology may fund (75 percent of Eligible Project Costs up to the \$1,000,000 grant ceiling). Refer to the funding program guidelines at:</i> http://www.ecy.wa.gov/programs/wq/funding/FundingPrograms/OtherFundingPrograms/StWa12a/FY12aStWa.html	<u>\$384,000</u>															
Other Funds in PROJECT Identify secured source(s) of funds: <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 30%;">State/Federal agency</td> <td style="width: 10%;">_____</td> <td style="width: 60%;"></td> </tr> <tr> <td>State/Federal agency</td> <td>_____</td> <td></td> </tr> <tr> <td>State/Federal agency</td> <td>_____</td> <td></td> </tr> <tr> <td>Local Agency</td> <td><u>City of Bellingham Storm & Surface Water Utility Match</u></td> <td></td> </tr> <tr> <td>Interlocal contribution</td> <td>_____</td> <td></td> </tr> </table>	State/Federal agency	_____		State/Federal agency	_____		State/Federal agency	_____		Local Agency	<u>City of Bellingham Storm & Surface Water Utility Match</u>		Interlocal contribution	_____		\$ _____ \$ _____ \$ _____ <u>\$128,000</u> \$ _____
State/Federal agency	_____															
State/Federal agency	_____															
State/Federal agency	_____															
Local Agency	<u>City of Bellingham Storm & Surface Water Utility Match</u>															
Interlocal contribution	_____															

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FY 2012 Statewide Stormwater Grant Program Application

12. BRIEF NARRATIVE DESCRIPTION OF PROJECT : (50 words or less)

(Please use complete sentences, this description will appear in the published funding list):

This project implements LID retrofits to mitigate for, or eliminate sources of, nutrient and bacteria loading in stormwater runoff from Bloedel-Donovan Park into Lake Whatcom. Project designs utilize reforestation and infiltration as Best Management Practices to mimic native forest conditions and sand media filtration to provide enhanced treatment.

13. APPLICATION CERTIFICATION:

I CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION IN THIS APPLICATION IS TRUE AND CORRECT AND THAT I AM THE **LEGALLY AUTHORIZED SIGNATORY** OR DESIGNEE FOR THE SUBMITTAL OF THIS INFORMATION ON BEHALF OF THE APPLICANT.

Printed Name	Signature
Title	Date

THIS CONCLUDES PART 1

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

This is the rated portion of the application with a total of 1,000 possible points.

Each question identifies the proportion of available points. Applicants should provide clear and concise information and answers. The Application Scoring Guidance provides information on what reviewers will look for in a successful application.

Pre submittal checklist:

- ☒ Project Analysis Form – included at the end of the application Part 2, **(required for project evaluation and review)**.
- ☒ Parts 1 and 2 of the application are complete. Supporting materials such as maps, MOAs, or specific documentation is included with the application packet.
- ☒ The Funding Request (Part 1-Question 11) matches the Budget (Part 2-Question 2).

EXECUTIVE SUMMARY

Summarize the overall stormwater project, the associated stormwater problem, and how this project will address or solve the problem. (Limit your answer to 250 words or less.)

This project implements LID and Enhanced Treatment BMPs to mitigate for, or eliminate, nutrient and bacteria loading attributed to stormwater runoff generated from Bloedel-Donovan Park, which drains to Lake Whatcom directly upstream of Whatcom Creek. Due to low dissolved oxygen and high fecal coliform bacteria levels, both Lake Whatcom and Whatcom Creek have been listed as impaired water bodies, under provision 303(d) of the Clean Water Act. The Lake Whatcom reservoir is the primary source of drinking water for the City of Bellingham and adjacent portions of Whatcom County, supplying potable water to upwards of 95,000 residents.

Project areas to be retrofitted are on City-owned property within Bloedel-Donovan Park, a public park comprised of approximately 3.5 acres of unmitigated turf located immediately adjacent to the Lake, with drain outlets and surface flows feeding Whatcom Creek. The Park is a popular recreation destination for both City and County residents and visitors, providing boating and fishing access, off-leash dog areas, and community event facilities.

Nutrient and bacteria loading from these areas is attributed to lawn maintenance activities as well as pet and waterfowl waste. Reforestation, infiltration, and enhanced treatment BMPs would be installed to mitigate and/or eliminate pollutant loading. LID retrofits in these areas, in addition to providing direct water quality benefits, would be prominent and accessible to the public. Education and outreach efforts drawing on these retrofit projects could be vital in encouraging similar mitigation projects on private properties.

1. SCOPE OF WORK

Scoring Guide	Total 250 Points
Complete and concise project description. Provides clear detailed description of project tasks, deliverables, timelines, and purpose. Information on the project was provided in the Project Analysis Form.	Up to 250 pts.

Reviewers award points for a clear, complete, and well thought-out scope that directly addresses a stormwater problem. The scope demonstrates an understanding of the work required to fully implement and complete the

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

project. *In order to be considered for funding, all applicants must fill in answers on the Project Analysis Form, located at the end of this application.*

Using the task and required performance framework provided below:

- Provide a detailed scope of work for the project that includes clearly defined tasks, deliverables, timelines, and cost per task.
- The detailed Scope of Work and the Project Analysis Form are the only places where you can describe your proposed project so Ecology reviewers can understand what you plan to do. In order to receive the most points you need to describe the project fully so that Ecology can understand the proposed construction activities and compare this application with others.
- Describe the project area and provide supporting map(s) and any relevant diagrams and/or pictures.
- Reference the stormwater manual used for the project design.

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

Task 1 – Project Administration and Management

- A. The RECIPIENT will administer and manage the project. Responsibilities will include, but not be limited to: maintenance of project records; submittal of payment vouchers, fiscal forms, and progress reports; compliance with applicable procurement and interlocal agreement requirements; attainment of all required permits, licenses, easements, or property rights necessary for the project; conducting, coordinating, and scheduling of all project activities; quality control; and submittal of required performance items.

The RECIPIENT will ensure that every effort is made to maintain effective communication with the RECIPIENT's designees, the DEPARTMENT, all affected local, state, or federal jurisdictions, and any interested individuals or groups. The RECIPIENT will carry out this project in accordance with completion dates outlined in this Agreement.

- B. The RECIPIENT shall submit all invoice requests and supportive documentation to the Financial Manager of the DEPARTMENT.

Required Performance:

1. Effective administration and management of this grant project.
2. Maintenance of all project records.
3. Submittal of all required performance items, including the Post Project Assessment Plan, progress reports, financial vouchers, and maintenance of all project records.

Total Task Cost: \$10,000

Task 2: Design and Permitting Activities

- A. The RECIPIENT will complete pre-design analysis of the project area, including but not limited to general geotechnical investigation, surveying, laboratory soil testing, location of existing utilities, and stormwater modeling.
- B. The RECIPIENT will contract with consultant(s) for cooperative design of project. The Project Engineer, from the Parks and Recreation Design and Development Division, and the Engineering Technician, from the Public Works Stormwater Division will provide general design criteria, assumptions, and expected performance standards for the project.
- C. The RECIPIENT's consultant will review the general information and provide comments to the Project Engineer and Engineering Technician for consideration.
- D. The RECIPIENT will work with the Planning and Community Development Permit and Review staff to ensure necessary permits applications are submitted and comments are addressed.
- E. The RECIPIENT's consultant will review permit applications and subsequent comments and provide input to the Project Engineer and Engineering Technician regarding project design, phasing, timelines, and other changes necessary to improve project performance.

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

- F. The RECIPIENT will facilitate design review meetings with all relevant staff from all departments, in cooperation with the RECIPIENT's consultant, as needed during design phase.

Required Performance:

1. Completion of pre-design analysis of project area sufficient to allow for preliminary design.
2. Entrance into contract with qualified consultant(s) for completion of plans adequate for permit submission.
3. Development of project timelines, phasing, specifications, and expected performance with input from staff and consultant.
4. Secure approval of all permits for work.

Total Task Cost: \$92,000

Task 3: Construction Management

- A. The RECIPIENT will manage construction, with the Project Engineer and Park Project Specialist taking lead roles in administration and oversight.
- B. The RECIPIENT will produce a bid sheet for the project, as designed and permitted.
- C. The RECIPIENT will enter into an agreement with a qualified contractor selected in accordance with city and state public bidding requirements.
- D. The RECIPIENT will be responsible for construction-phase oversight duties, including but not limited to; bid advertisement, pre-award checklist to verify the contractor is responsible and responsive, preconstruction meetings, and weekly construction progress meetings.
- E. The RECIPIENT will be responsible for project-related material specifications and project-specific inspections, including but not limited to; materials testing, materials documentation and quantity measurements, quality control inspections, and prescribed erosion and sediment control inspections.
- F. The RECIPIENT, as a condition of secured permits, will coordinate and submit to regular inspections from relevant City departments as needed or merited per permit requirements and subject to field conditions.
- G. The RECIPIENT will ensure that project is completed on time and meets expected performance through the implementation of a project closeout checklist

Required Performance:

1. Development of bid documents and completion of bid process.
2. Entrance into contract with qualified contractor(s) for completion of project as designed.
3. Construction management and oversight of project-based activities, materials, inspections, performance, and reporting.

Total Task Cost: \$22,000

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

Task 4: Construction

- A. The RECIPIENT will be responsible for ensuring that construction is completed in accordance with the Lake Whatcom Reservoir Regulatory requirements.
- B. The RECIPIENT will provide oversight, as detailed in Task 3. The Project Engineer and Project Specialist will be on-site during construction. The Engineering Technician will provide regular Erosion and Sediment Control inspections in cooperation with the Stormwater Division's inspectors as required by permit.
- C. The RECIPIENT's contractor will be directed to complete all heavy earthwork, including but not limited to; excavation, backfilling, removal of topsoil, grading, and haul away during the driest months, July through August.
- D. The RECIPIENT's contractor or Parks volunteer crews will complete sheet mulching activities in early June and planting activities during the second half of September. The RECIPIENT may also pursue a special exemption that is provided for Lake Whatcom Water Quality Improvement Projects, through a Director's Exemption in 2010, which allows sheet mulching and planting in mulched areas in months when the work window for land disturbance is normally closed. This would allow the RECIPIENT to sheet mulch earlier in the spring and plant later in the fall to improve project performance and reduce watering needs for new plantings.
- E. The RECIPIENT will ensure that plants establish to a minimum of 80% survivorship rate by providing operations and maintenance training to staff responsible for regular parks upkeep. Specialized training may be provided by experts at the RECIPIENT's cost or through existing staff expertise.

Required Performance:

- 1. Construction inspections are completed regularly, timely to any storm events, and in accordance to all permits.
- 2. Completion of all excavation, backfilling, soil removal, and grading during the dry months.
- 3. Completion of mulching and planting activities at times adequate for plant establishment and survival.

Total Task Cost: \$310,000

Task 5: Post-Construction

- A. The RECIPIENT will complete project closeout tasks which will include project completion checklists, as-built drawings, archiving of project, final inspection and public outreach.
- B. The RECIPIENT will undertake post construction monitoring through monthly site inspections for two dry seasons (June 1 – Sept. 30) after the project is completed.
- C. The RECIPIENT will contract with a design consultant to develop a maintenance and management plan for the project site.

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

Required Performance:

1. Completion of project archiving.
2. Monitoring of project for erosion and sediment control and plant establishment and survival .
3. Development of management plan.

Total Task Cost: \$78,000

2. PROPOSED BUDGET (up to 100 points)

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

Scoring Guide	Total 100 Points
Complete project budget is consistent with the scope of work.	Up to 20 pts.
The cost estimates are clear and reasonable.	Up to 30 pts.
The project budget represents a good value for the work and water quality benefit achieved. A value analysis or similar study was performed.	Up to 50 pts.

Budget: Points are awarded for a complete, reasonable budget that is consistent with the tasks described in the scope of work. *Please fill out the Budget by Task and by Object.*

- Clearly define the Task- or Object-oriented budget.

TOTAL Eligible Cost by Task Elements

Proposed Project Budget and Time Frame			
Task elements	Total Project Cost	Total Eligible Cost	Estimated months needed to complete
1. Project administration/management	\$ <u>10,000</u>	\$ <u>10,000</u>	<u>Concurrent with other tasks</u>
2. Design and Permitting Activities	\$ <u>92,000</u>	\$ <u>92,000</u>	<u>7</u>
3. Construction Management	\$ <u>22,000</u>	\$ <u>22,000</u>	<u>Concurrent with other tasks</u>
4. Construction	\$ <u>310,000</u>	\$ <u>310,000</u>	<u>4</u>
5. Post-Construction Activities	\$ <u>78,000</u>	\$ <u>78,000</u>	<u>4</u>
Total costs and months needed to complete:	\$ <u>512,000</u>	\$ <u>512,000</u>	<u>15</u>

TOTAL Eligible Cost by Budget Object

Salaries:	\$ <u>21,000</u>	
Benefits:	\$ _____	
Indirect costs:	\$ <u>7,000</u>	(May include up to 25% of employee salaries and benefits)
Contracts:	\$ <u>310,000</u>	Construction Contracts
Materials, goods, and services (list major item):	\$ _____	
Equipment (list major items):	\$ _____	
	\$ <u>168,000</u>	Non Construction costs including consultant contracts
Travel:	\$ _____	
Other (please outline):	\$ <u>3,000.00</u>	Miscellaneous expenses, printing, mailing, graphics for public meeting
	\$ <u>3,000.00</u>	permits, bid advertisement
	\$ _____	
Total Eligible Cost:	\$ <u>512,000</u>	Please see Table 1 (attached) for preliminary detailed cost estimate

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

Match Source

List other funding sources and amounts, including local cash matching funds. In-kind contributions are not eligible.

Funding Source: City of Bellingham Stormwater Fund \$128,000

Funding Source: _____ \$ _____

Funding Source: _____ \$ _____

Describe the status of matching funds: Will be budgeted towards this project by City Council after the grant is awarded.

Cost Estimate Process: Reviewers award points to cost-effective projects with accurate cost estimates. For example, an applicant may determine cost effectiveness and estimate accuracy based on experience with past or on-going projects, through consultation with other entities that have related experience, or through a planning process such as value analysis.

- Describe how costs were estimated. Include the steps taken to ensure accuracy.
- Describe the process used to control cost and ensure that this is a cost effective project (e.g., value engineering or cost benefit analysis).
- Identify the Match sources.

Please reference Table 1 (attached) for detailed preliminary cost estimate. Costs were estimated based on quantity measurements from the project site. Unit prices were derived from past project bids, RS Means reference books, and Washington State Department of Transportation Unit Bid price analysis (available online from the WSDOT website). Also, calls were made to local suppliers to verify some of the unit prices. Match sources will be from the City of Bellingham's stormwater fund. This project includes relatively simple, but effective, elements to treat stormwater at the site. The least costly, but most effective, LID techniques are included in this design. During construction, regular inspections, materials testing, and materials documentation will be used to ensure the project meets the set budget. A 25% contingency has been included in the preliminary cost estimate. On average, the construction projects managed by the Parks Project Engineer have averaged approximately 7% in change orders, most of which were elective change orders by the city. This is well below the industry standard contingency of 10 to 20% for construction projects.

3. SEVERITY OF PROBLEM, STORMWATER QUALITY, AND HYDROLOGIC IMPROVEMENTS

Scoring Guide		Total 300 Points
Severity of the stormwater problem is well documented.		Up to 100 pts.
Project will achieve substantial water quality or hydrologic benefits. The project provides treatment for a large portion of the watershed, or addresses a significant amount of the stormwater problem.		Up to 100 pts.

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The project provides long term sustainability of water quality benefits (e.g., Operation and maintenance of the system, long-term program follow-up, watershed management).	Up to 100 pts.
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Reviewers award points for addressing severe stormwater problems, documentation of those problems, and expected protection of water quality and improvements to hydrologic function. Projects with substantial environmental improvements receive the most points.

Projects with measurable improvements receive more points than those with unclear or vague benefits. Reviewers will consider the actual benefit, the total impact (area impacted, number of people affected) and level of implementation, and the severity of the problem. Reviewers will consider only changes that can be achieved by the proposed scope of work.

- Define the severity of the stormwater problem. If available, show how the problem has been documented in a plan or assessment (e.g., TMDL Water Quality Improvement Report or Water Quality Implementation Plan, presence of 303(d)-Listed water bodies, part of watershed or salmon recovery plan).
- Describe the expected project results, including how the project will achieve water quality protection or improvements and restore hydrologic functions.
- Describe how much of the watershed will be treated, and how much of the stormwater problem will be addressed by the project.
- Describe how the water quality or hydrologic improvements will be sustained for the long-term. As appropriate, include information on how long-term operation and maintenance of the facility will be addressed.
- If in the Puget Sound basin (WRIAs 1-19), describe how the project meets the goals of the Puget Sound Partnership Action Agenda, and how well it aligns with Section C of the Agenda. The Puget Sound Partnership Action Agenda can be found at: http://www.psp.wa.gov/aa_action_agenda.php

Lake Whatcom, directly adjacent to the project area, is a 303(d) listed impaired water body due to low dissolved oxygen levels. The Lake Whatcom reservoir is the primary source of drinking water for the City of Bellingham and adjacent portions of Whatcom County, supplying potable water to upwards of 95,000 residents. The Lake Whatcom TMDL, published by the Washington State Department of Ecology in November of 2008, indicates that Phosphorus loading is the primary driver of oxygen depletion. This degradation is via the process by which algae growth is accelerated by excess nutrients entering the Lake through stormwater runoff. At the same time, research done on behalf of the City of Bellingham has shown that the primary source of these nutrients - namely Soluble Reactive Phosphorus (SRP) - is stormwater runoff generated from unmitigated lawn areas and ineffective, non-native, landscaping. The primary clean up strategy promoted in the Lake Whatcom Watershed, in order to manage runoff to meet TMDL goals, is retrofitting existing developed areas using Low Impact Development techniques designed to mimic native forested conditions. The TMDL specifically assigns a Phosphorus loading rate for surfaces in the watershed, with forest (0.15 lbs/ac/yr) being the pre-developed condition and developed pervious (lawn, 1.31 lbs/ac/yr) and developed impervious (roof, driveway, street, 0.87 lbs/ac/yr) being the existing conditions. Mitigated conditions implementing LID techniques are expected and approved by Ecology to achieve reductions in the existing conditions which will meet or exceed the pre-developed conditions. LID retrofits are the primary tool by which development impacts will be minimized and forested conditions will be met.

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Whatcom Creek, also directly adjacent to the proposed retrofit area, is a 303(d) listed impaired water body due to both low dissolved oxygen and high fecal coliform bacteria levels. The TMDL process is in development for Whatcom Creek, with preliminary reports undergoing review and edits at this time. The dissolved oxygen problem has been traced to the same source(s) as Lake Whatcom, described above. Elevated levels of fecal coliform bacteria, as indicated in preliminary studies of Whatcom Creek and other Lake Whatcom tributaries, can be generally attributed to stormwater runoff which carries pet and waterfowl waste into the water bodies.

Project areas to be retrofitted are on City-owned property within Bloedel-Donovan Park, a public park comprising of 3.5 acres of unmitigated turf located immediately adjacent to the Lake, with drain outlets and surface flows feeding Whatcom Creek. The Park is a popular recreation destination for both City and County residents and visitors, providing boating and fishing access, off-leash dog areas, and community event facilities. Nutrient and bacteria loading from these areas is attributed to lawn maintenance activities as well as pet and waterfowl waste. Reforestation, infiltration, and enhanced treatment BMPs would be installed to mitigate and/or eliminate pollutant loading. LID retrofits in these areas, in addition to providing direct water quality benefits, would be prominent and accessible to the public. Education and outreach efforts drawing on these retrofit projects could be vital in encouraging similar mitigation projects on private properties.

The project will utilize a treatment train, modified to fit site conditions as a retrofit project, as described in the Phosphorus Treatment Menu found in section 3.3 of Volume V of the DOE's 2005 Stormwater Management Manual for Western Washington. In addition, this treatment train will work to remove and reduce fecal coliform contributions by treating surface flow generated from areas of high pet and waterfowl use. The project components, to be designed and confirmed by consultants hired to implement the project, may include (but are not limited to);

- Filter Strip(s) (BMP T9.40) at least 10' wide and managed accordingly, which provides pretreatment
- Linear Sand Filter(s) (BMP T8.20) extending the length of the shoreline to the north
- Infiltration Facilities (multiple BMPs apply) within or beneath the sand filter
- Native Planting Areas using Low-Phosphorus Mulch and replicating native forest
- Infiltration Facilities within or below permeable pavement
- Modification, repair, replacement, or upgrades of existing infiltration systems as needed

Although actual P-removal rates are subject to measured inputs, frequency of large storm events, and park management techniques, the general expected performance of these BMPs is as follows;

- Filter Strip – Sand Filter Treatment Train: Reduce Phosphorus from 1.31 lbs/ac/yr to 0.65 lbs/ac/yr.
- Infiltration Facilities: Reduce Phosphorus from 1.31 lbs/ac/yr to 0.15 lbs/ac/yr or less
- Native Planting Areas: Reduce Phosphorus from 1.31 lbs/ac/yr to 0.15 lbs/ac/yr

In totality, the project could be expected to reduce surface runoff P-loading from 4.59 lbs/ac/year to 0.45 lbs/ac/yr or less. This would equate to a total loading reduction of 90% and a reduction in the Human-caused loading approaching 100%. Park management techniques identified in the study could also contribute to increased reductions in loading (from source control, etc.) above and beyond those simply resulting from treatment and infiltration.

Removal of fecal bacteria through sand (such as Type C-33 Sand) is well-documented as a treatment strategy for septic system effluent as approved by the Washington State Department of Health. Actual loading rates of fecals from pet and waterfowl waste are not known at the project site, but proximity of waste to existing water

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courses is well-documented. The areas served by the treatment train include the areas of highest use by pets and waterfowl.

The project is within a City-owned park and thusly will be managed and maintained as a normal Parks Department responsibility. Project-specific Operations and Maintenance will be applied though the Parks Maintenance staff and will be prescribed through a cooperative effort between the Stormwater Department, the Parks Department, and the consultant hired to complete the management and maintenance study. Filter strips, sand filters, infiltration facilities, and native planting area BMPs have known and tested maintenance requirements approved by Ecology and similar agencies in the United States. These requirements and maintenance schedules will be utilized as a basis for prescriptive O+M for project components.

The Lake Whatcom Watershed is a priority action area for Whatcom County as identified in the Puget Sound Partnership's Action Agenda. The following Priority Actions (from Section C of the Action Agenda) are directly addressed through this project;

C.1 Prevent pollutants from being introduced into the Puget Sound ecosystem to decrease the loadings from toxics, nutrients, and pathogens.

C.2 Use a comprehensive, integrated approach to managing urban stormwater and rural surface water runoff to reduce stormwater volumes and pollutant loadings.

- C.2.1 *Integrate efforts to manage stormwater discharges with work to protect land cover and reduce pollutants at the watershed scale and across Puget Sound.* This means implementing the land use protection and restoration actions described in Priorities A, B, and D, as well as the loadings reduction strategy in C.1.
- C.2.1.1 Integrate stormwater management efforts into integrated watershed planning. This would include actions identified in Sections A and D, as well as Watershed Management Plans and Water Quality Improvement Plans.
- C.2.2.5 Advance the use of LID approaches to stormwater management. This includes, but is not limited to: a) resolve institutional barriers that limit use of LID for new development and redevelopment and road construction, including an update of stormwater flow control standards; b) implement, assess, and promote successful examples of LID techniques; c) develop incentives for using LID; d) develop focused training for contractors and developers and other stormwater professionals; and e) develop focused training for local government staff on areas best suited for LID and assist them in revising their regulations to allow LID.

4. PROJECT TEAM

Scoring Guide	Total 50 Points
Team members' roles and responsibilities are well defined and an estimated percentage of time each team member will devote to this project is adequate for the scope of	Up to 30 pts.

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work.	
Team members' past experience is relevant.	Up to 20 pts.

Reviewers will award points based on skills, qualifications, and experience of the project team members.

- Describe roles and responsibilities of each team member. As applicable, include contractors and partner agency roles. Include the estimated amount of time each team member will devote to the project. (e.g., what percentage of each team member's work week will be devoted to this particular project?)
- Describe the relevant skills and qualifications of each team member (*do NOT submit resumes*).
- Discuss your commitment to maintain staff competencies and responsibilities over the life of the project.

The main team members for this project include:

1. Park Project Engineer
2. Park Project Specialist
3. Public Works Engineering Technician
4. Park Accounting Assistant

The Park Project Engineer's role will be as project manager. The Park Engineer will devote 10 to 50% of her work week towards this project. Her responsibilities will include overall project management, grant compliance, construction management, project documentation management, project administration, permit preparation, consultant management, public outreach, and contract management. The Park Engineer is a registered professional engineering in Washington State and California. She holds a Bachelor's and Master's degree in Civil Engineering and is the past president of the American Society of Civil Engineers North Seattle Chapter. Over the last 9 years with the City of Bellingham, she has managed 15 major construction projects ranging from \$150,000 to \$6,900,000 in construction costs totaling over \$17 million dollars in projects.

The Park Project Specialist's role on this project will be as lead site inspector. She will be responsible for quality control inspections, material documentation, and general construction inspection. The Park Project Specialist will devote 10 to 50% of her time towards this project. During construction, her devoted time will be closer to 50%. While working at Bellingham Parks & Recreation for eleven years, the Park Project Specialist is the field contact and construction inspector for large Capital Projects with diverse construction types ranging from docks to sports fields. Her Landscape Architecture degree and her professional experience gives her a firm footing in Low Impact Development techniques as applied to Park Development in sensitive areas including wetlands, water bodies, forests and landfills. She is an expert at advance contract documentation for federally funded projects and brings an ability to work well with contractors in the field to the team.

The Public Works Engineering Technician administers Low Impact Development retrofit projects, on behalf of individual homeowners, on private properties in the Lake Whatcom Watershed through an existing City of Bellingham Program. He is a Certified Erosion and Sediment Control Lead and is intimately familiar with the City of Bellingham's development and stormwater regulations pertaining to activities within the regulated portion of the Lake Whatcom Watershed (Bellingham Municipal Code 16.80 Lake Whatcom Regulatory Chapter and BMC 15.42 Stormwater Management). As an employee of the City of Bellingham, he has administered two Water Quality Improvement Programs and completed retrofit projects involving nearly 200 homeowners. Currently, he is overseeing LID retrofits of approximately 45 properties within the Lake Whatcom Watershed.

The Park Accounting Assistant's role on this project will be as the grant accounting manager. She will keep all

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records for the grant, prepare grant reimbursement requests for review by the Park Project Engineer, and manage all payment files for the project. She has training and experience in managing Ecology grants and currently manages an active Ecology grant for the Parks Department. Her time devoted to this project will be approximately 10% per week.

Other team members that will provide supporting functions include the Park Operations grounds supervisor, Park Operations Manager, and the Parks Design and Development Manager.

Other roles and responsibilities include:

- Professional consultants will be responsible for the overall design
- A construction contractor , with oversight by the Park Engineer, will be responsible for all construction activities
- A professional consultant will be hired to develop a Park Management Plan consistent with reduction of phosphorus sources and long-term viability of water quality facilities.

The Parks Department has reputation for seeing projects through, caring for our public lands, and setting an example for others. We are committed to this project. Our performance can be measured by our successes on past projects. Our time on this project can be scaled back or ramped up as needed.

5. PROJECT DEVELOPMENT PROCESS AND LOCAL COMMITMENT

Scoring Guide	Total 50 Points
A comprehensive decision making process was used to arrive at the proposed project.	Up to 30 pts.
The level of local support and commitments from project partners is documented.	Up to 10 pts.
A collaborative process will be implemented to execute the project.	Up to 10 pts.

Reviewers award points based on project development and implementation efforts and commitments from project partners. Provide documentation as appropriate (e.g. MOA, interlocal agreement).

- Describe the decision making process used to select this project. Why was this project chosen as the best solution over other projects?
- If applying for multiple projects in the same area or if this project is part of a larger phased project, describe how the projects or phases are different and explain the water quality priorities for the area.
- Describe how you have involved and fostered local, regional, and statewide partnerships for the success of the project.
- Describe past project performance, water quality outcomes, and how you will sustain long-term water quality efforts for this project.
- Describe past project successes, including outcomes achieved, and performance.

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Utilizing the best available science as researched and understood by the City of Bellingham - through ongoing and direct partnership with the Department of Ecology - this project was designed to meet the best possible phosphorus-loading reductions while still maintaining public uses of the Park.

This project and its components was selected through collaborative partnerships between departments within the City of Bellingham and utilizes lessons learned through public and private LID retrofits completed by the City of Bellingham. Involved in the decision-making and project development portions of this application were,

- Bellingham City Council, through directives and priorities
- Bellingham Parks and Recreation Design and Development Section, through direct contribution to design strategy and cooperative project management
- Bellingham Public Works Stormwater Section, through direct contribution to design strategy and cooperative project management.
- Bellingham Parks and Recreation Maintenance Section, through direct review and feedback
- Bellingham Public Works Stormwater Maintenance Section, through direct review and feedback
- Bellingham Planning Department Shoreline Management Program, through direct review and feedback
- Bellingham Planning Department Lake Whatcom Management, through indirect consultation on similar projects
- Bellingham Public Works Homeowner Incentive Program, through indirect consultation on similar projects

This project would comprise a major component of a larger series of projects intended to limit or remove phosphorus impacts from all public areas draining to Lake Whatcom. Since BMPs are often site-specific, this project is designed address the largest single contributor of lawn-sourced loading in the City's possession and direct control. A LID retrofit project (and concurrent projects as funded) to address loading from City street areas was completed in 2008. The City also administers a grant program to address private property contributions. The retrofit of Bloedel-Donovan park was identified as a priority due to its existence as an unmitigated phosphorus source which has not yet been addressed in full.

As part of the Homeowner Incentive Program, the City of Bellingham has sponsored homeowner-driven projects which contain many of the same components proposed for the Park retrofit. These projects were designed collaboratively between the homeowners and the City of Bellingham Stormwater Division and were shepherded through permitting and construction by City of Bellingham Staff. The specifications, construction process, and other considerations are well-known to project staff.

6. READINESS TO PROCEED

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Scoring Guide	Total 150 Points
Project elements are in place for the project to proceed and documentation is provided (e.g. Planning, Design, Permits).	Up to 100 pts.
SEPA review is complete and documentation is provided.	Up to 25 pts.
Cultural Resources (Exec. Order 05-05) is complete and documentation is provided.	Up to 25 pts.

Reviewers will award points based on how soon a project can begin construction.

- Describe the steps you have taken to proceed immediately with the project. Provide detailed information and documentation on project elements such as status of designs, permits, inter-local agreements, landowner agreements, easements, other secured funding, staff, or agency approvals.
- Describe what environmental review has taken place, such as:
 - State Environmental Policy Act (SEPA).
<http://www.ecy.wa.gov/programs/sea/sepa/e-review.html>
 - Cultural resource assessment (Executive Order 05-05).
<http://www.dahp.wa.gov/pages/EnvironmentalReview/Laws.htm>

This is a priority project for the citizens of Bellingham. This has been a priority project for staff as well for many years but has never been funded due to budget cuts. This project is included in the 2011 Executive Department's objectives to meet the, "Legacies and Strategic Commitments" for "Clean, Safe Drinking Water," adopted by the City Council in 2009. This project is also supported by representatives from the Silver Beach Neighborhood Association.

Stormwater matching funds have been secured for this project. Upon authorization of the grant funding, the city is immediately available to start the design and permitting process for this project.

A site reconnaissance has been conducted and the necessary steps for design and construction have been identified. The project is concise and focused on two project elements: a sand infiltration trench and a native planting buffer. We have already started preliminary consultation with the City's SEPA official and other regulatory agencies. The project may qualify for a streamlined permit process. In addition, the project most likely will not require a State Shoreline Permit under WAC 173-27-040. The shoreline restoration concept has been chosen to minimize soil disturbance and eliminate the need for fill below the ordinary high water mark. The property is owned by the City. We are fully staffed to begin work on this project immediately.

City of Bellingham land disturbance restrictions are in effect from October 1 – June 1 yearly. Due to these limitations, work involving land clearing and excavation will not commence until June 1. This provides more than adequate time for full design and permitting tasks to be completed.

7. EARLY ADOPTERS OF NEW REGULATIONS and TECHNOLOGY

Scoring Guide (choose one option)	Up to a Total of 50 Points
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Applicant has adopted no requirements of the current permit.	0 pts.
Applicant has adopted one of the permit requirements listed below.	10 pts
Applicant has adopted two of the permit requirements listed below.	20 pts
Applicant has adopted three of the permit requirements listed below.	30 pts
Applicant has adopted four of the permit requirements listed below.	40 pts
Applicant has adopted five of the permit requirements listed below.	50 pts
<hr/>	
Applicant provided information on implementation of new technology.	10 pts.

Reviewers award points based on information provided by the jurisdiction for the number of the following permit requirements that are met:

- Has the applicant developed and implemented a Stormwater Management Program (SWMP)?
- Does the applicant have an active stormwater Public Education and Outreach Program?
- Does the applicant have an active Illicit Discharge, Detection, and Elimination Program?
- Has the applicant developed and implemented an ordinance to prohibit non-stormwater and illegal discharges and/or dumping in the permitted separate storm sewer system?
- Has the applicant developed an Operation and Maintenance Plan for the permitted area?
- Has the applicant mapped the permitted separate storm sewer system?

Also, if applicable, please provide information on any new stormwater technology that has been implemented within this jurisdiction (e.g. low impact development techniques, TAPE).

- Has the applicant implemented new stormwater technology in the permitted area?

The City of Bellingham operates a Storm and Surface Water Utility which is responsible for the following tasks;

- Management of existing stormwater infrastructure.
- Development and reporting related to Stormwater Management Program.
- Maintenance and upgrading of stormwater treatment, detention, and conveyance facilities.
- Providing education and outreach on stormwater issues, including an in-school program.
- Implementing a source control program.
- Mapping and record keeping of private and public stormwater facilities.
- Inspecting private and public stormwater facilities.
- Enforcing regulations regarding all illicit discharges, including sediment discharged from construction activities.
- Managing the National Pollutant Discharge Elimination Permit held by the City of Bellingham.
- Promoting Low Impact Development retrofits on private property through homeowner-based programs.
- Communicating stormwater concerns, and providing training, to City employees from other departments.

Through the Utility and cooperative programs, the City of Bellingham has already installed a number of LID techniques, including;

- Rain Gardens
- Storm Filter Cartridge Vaults

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- Permeable Pavement
- Rainwater Harvesting and Reuse
- Infiltration Trenches
- Native Planting Areas
- Shoreline Buffers
- Presentation of Low Impact Development Educational Workshops

Within the Lake Whatcom Watershed, the impaired water body in which this project is located, ongoing City programs, some funded by Department of Ecology Grants, have implemented a number of LID strategies on private properties, including;

- Rain Gardens
- Infiltration Trenches
- Sand Filters (large and small)
- Wet Ponds
- Biofiltration Swales
- Permeable Paving (pervious concrete, permeable pavers, porous asphalt)
- Native Planting Areas
- Lawn Removal
- Vegetated Berms
- Shoreline Buffers
- Riparian Restoration
- Rainwater Harvesting and Reuse

8. HARDSHIP

Scoring Guide	Total 50 Points
This jurisdiction has a Median Household Income less than 80 percent of the state Median Household.	Up to 50 pts.

Reviewers will award points based on jurisdiction's Median Household Income information provided. (Ecology will compare the information provided by the applicant to the Office of Financial Management data for state Median Household Income).

- Please provide the Median Household Income for the applicant (see Appendix B in the FY 2012 Statewide Stormwater Grant Program Guidelines).

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This project is located in the City of Bellingham.

According to the FY 2012 Statewide Stormwater Grant Program Guidelines, the MHI for the city is:

Bellingham, city \$ 37,031

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Project Analysis Form

Purpose

Please fill in the application-level Project Analysis Form for the proposed stormwater infrastructure project. This information is necessary to obtain funding from the Department of Ecology (Ecology) for stormwater construction projects. Stormwater infrastructure technical information gives Ecology an opportunity to review and comment on the technical merits and cost effectiveness of projects, ensuring that Ecology's funds are used for only high quality projects. The information in the Project Analysis Form is not a permit requirement, but is a pre-requisite for applying for design/construction and/or construction funding.

The Project Analysis Form must be complete enough that Ecology can fully understand the proposed project. A well described project will score higher than one with limited information. This information does not require the use of an engineer to prepare, but will be used by Ecology reviewers to further determine the overall scope of the project, the area the project is anticipated to protect, the relative size of the stormwater issue, and the readiness to proceed with design construction or construction.

Required Elements

Please address the following elements for the proposed project:

1. Provide information on the Technical Project Manager and their qualifications including professional licenses, experience, and relationship with applicant. Include contact information for the Project Manager.

The Park Engineer is a city employee and registered professional engineering in Washington State and California. She holds a Bachelor's and Master's degree in Civil Engineering and is the past president of the American Society of Civil Engineers North Seattle Chapter. Over the last 9 years with the City of Bellingham, she has managed 15 major construction projects ranging from \$150,000 to \$6,900,000 in construction costs with a total of over \$17 million dollars for all projects combined.

The Project Manager can be contacted Monday thru Friday by email, US Mail, phone or in person. Her contact information is as follows:

Gina Gobo Austin, PE
City of Bellingham Parks Design and Development Division
3424 Meridian Street
Bellingham, Washington 98225
360-778-7000
gaustin@cob.org

2. Provide a project description that includes a location map and a topographical map of the drainage area overlain with project elements (buildings, swales, erosion control structures, etc.). Include a description of the flow control and/or water quality BMPs proposed. If you have not made a final decision on the facilities, identify what facilities you are considering and how the proposed BMPs will mitigate the pollutants on the site.

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The city plans to work with a consultant to cooperatively design, permit and construct this project. Design work will include project components found in the 2005 Stormwater Management Manual for Western Washington, including Erosion and Sediment Control BMPs (Volume II), Enhanced Treatment and Runoff Management BMPs (Volume V), and will adhere to all requirements of the Bellingham Critical Areas Ordinance and Bellingham Municipal Code. The City will ensure that the most stringent local regulations, found in the Lake Whatcom Reservoir Regulatory Chapter, will be strictly adhered to for this project. This Chapter (BMC 16.80) requires that only projects that are phosphorus-or-flow-limiting are permissible to be constructed without a fully engineered site plan for the entire property. While this project will mitigate for a great deal of the site, it must meet the phosphorus-or-flow-limiting conditions to be viable under City of Bellingham code. A cultural resource study will also be completed and concurrence will be requested by the Washington Department of Archaeology and Historic Preservation. Design activities include preparation of engineering plans, specifications, stormwater report, and critical areas report. Permitting activities include a fill and grade permit, critical areas permit, state shoreline permit, SEPA, and Hydraulic Project Approval from Washington Department of Fish and Wildlife.

The project will have two primary components. Please refer to the attached map for project component locations. The site currently contains roughly three and a half acres of unmitigated turf grass, which generates sheet flow runoff directly into Lake Whatcom, especially during periods of heavy precipitation and/or elevated Lake levels. This turf is bisected by a concrete sidewalk, which gives a rough definition to areas we will refer to as “Project East” and “Project West” components. Project East contains about 1.8 acres of turf and 0.5 acres of existing (mostly non-native) vegetation, much of it native to Western Washington. Project West contains about 2.2 acres of turf along with a sand volleyball court, a playground, and a seasonal beach.

Project East:

The focus of this project is to convert turf grass into a mulched native vegetation buffer immediately adjacent to Lake Whatcom. LID techniques, including sheet mulching, will be implemented in order to reduce the amount of soil disturbance near the lake. Sheet mulching has been implemented on many city projects and is a highly effective technique for removing lawn areas. After the proposed area is sheet mulched (reference attached Figure 1 – Project Location Map), the area will be ready for planting approximately 6 – 8 weeks later. Plants will be chosen to meet microhabitat conditions on the site and will be drawn from native plant lists from Bellingham Park Standard No. 02930.00 “Greenway Restoration Plants” as well as guidance provided by the King County Native Plant Guide, the Washington State Native Plant Society, or local experts.

Also included in the shoreline restoration portion of this project is the removal of a failing concrete seawall. The concrete wall is retaining topsoil and grass turf. The proposed improvements includes removing the wall, topsoil and grass turf and replacing with a sand and gravel mix (reference Figure 3 attached – Shoreline Restoration).

This project also includes installing a phosphorus treatment train system along the rest of the shoreline East of the bisecting sidewalk. The purpose of the filter strip-linear sand filter treatment train is to capture and treat stormwater runoff from the remaining grass lawn area in Project East, with a contributing area roughly 0.8 acres in size. In addition to treatment, the design of the trench will allow for maximum possible infiltration, which is identified as the primary strategy for phosphorus removal. This trench system will be designed in conjunction with the main

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component of Project West, which is also a sand filter trench. Refer to the project west description, below, for filter strip-sand filter treatment train design criteria.

If geotechnical data shows unfavorable conditions for a sand filter trench, another LID retrofit that is compatible with the park master plan will be explored and implemented along the shoreline.

Project West:

This portion of the project will mitigate direct flows from surface runoff and shallow interflow from approximately 2 acres of turf by intercepting these flows and treating them through a filter strip-sand filter treatment train. The design will be modified to fit existing topography, provide adequate separation from ground water, and comply with shoreline regulations. Minimum area dimensions will account for a 4' wide trench running the entire length of the north shoreline of Bloedel Donovan Park. Underlying or aside the sand filter will be an infiltration facility to maximize infiltration for both treated and untreated surface water, per consultants' suggestions. All surface water will be directed through a minimum of 18" of filtration sand, which will be protected by multiple pretreatment strategies, including filter fabric and a 10' minimum width filter strip planted and maintained to maximize performance. In addition to infiltration through the bottom of the trench, infiltration will be encouraged in all conveyance systems and planted surfaces. If geotechnical data shows unfavorable conditions for a sand filter trench, another LID retrofit that is compatible with the park master plan will be explored and implemented along the shoreline.

Access required for compliance with ADA standards will be provided through a permeable pavement underlain with drain rock layers adequate for full infiltration, per WWHM3 Modeling calculations. Additionally, considerations will be in place to infiltrate excess water running from adjacent surfaces by collecting and piping this water to an infiltration trench below the permeable sidewalk.

Spoils from the excavation may be reused on site to create berms as passive conveyance systems or other planting areas to reduce total contributing lawn areas.

3. Provide the characteristics of the stormwater, including types of pollutant loads (TSS, Cu, Zn, P) and the land use in the area where the flow originates.

Stormwater runoff entering Lake Whatcom from the project areas is generated from primarily parks/open space land use and conveyed to the Lake through mostly surface flow. Included in developed uses are parks and open spaces, sidewalks and building roofs. Runoff from developed impervious (pavement) and developed partially-pervious surfaces (lawns and ineffective landscaping) has been identified as the source of nutrient loading that results in observed low dissolved oxygen levels in the Lake. Development techniques which cleared native vegetation, compacted or removed native soils, and thus impaired natural forest processes are demonstrated causes driving water quality degradation in Lake Whatcom. The observed and resultant increases of both nutrient loading and peak flow volume can be attributed to the change from a forested condition to the developed condition. Concurrently, high fecal coliform levels measured in Whatcom Creek and other Lake Whatcom tributaries is attributed to, amongst other things, unmitigated pet and waterfowl waste which enters the waterways through stormwater systems or

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surface flow. Pet waste is commonly deposited within open spaces and parks, while waterfowl waste is a particular concern along the currently open shoreline of Bloedel-Donovan Park.

4. Provide an estimate of the size of the drainage area controlled by the proposed facility and the overall drainage area upstream of the point where runoff enters the receiving water.

The total lawn area treated, infiltrated, or mitigated by replacement with native forest will be approximately 3.5 acres. Due to the project location, there is little to no upstream drainage which will enter or influence the facilities. This allows for a design specific to the conditions on site.

5. If the project is a retrofit, provide a discussion of how the proposed level of water quality treatment and flow control compare with the new and redevelopment standards.

Phosphorus loading from lawns and ineffective landscaping, especially traditionally-maintained turf is estimated (per Lake Whatcom TMDL Study) to be approximately 1.3lbs/acre/year. Replacement of these surfaces with vegetation designed to replicate a native forest can reduce this loading to 0.15lbs/acre/year. Implementation of enhanced phosphorus treatment and infiltration facilities has been shown to result in up to 75% pollutant removal through treatment and can reduce flow volumes and nutrient loading by 95% or more through infiltration. Sand filtration would provide treatment and removal of fecal bacteria as a method of enhanced treatment.

6. Have you evaluated alternative projects and if so provide the reasons they are unacceptable.

Alternative projects which have been evaluated include the installation of environmentally-friendly lawn (Eco-Turf or similar), the replacement of all turf areas in the Park and right-of-ways with native planting areas, and the implementation of end-of-pipe treatment as a means of pollutant removal.

The alternatives which propose removing or replacing all lawn areas are unacceptable due to the nature of Park use. Park users living in the area depend on Bloedel-Donovan Park as the only public open space available, within a reasonable distance, for exercise of pets, sporting events, community use, and recreational lake access for swimming, picnicking, and general aesthetic enjoyment. Replacement of the entire lawn area with a less durable surface such as Eco-Turf would reduce opportunities for pet exercise and sporting events. Removal of all lawn to be replaced with native vegetation would similarly reduce the opportunity for those activities as well as the others listed above. Striking a balance between open space and native planting areas which can serve as buffers to disturbance and impacts was perceived as a better alternative.

In regard to the alternative proposing end-of-pipe treatment, the inefficiency of centralized systems to treat adequate volumes of water during large storm events makes this strategy undesirable. Add to that the ongoing maintenance requirements of end-of-pipe systems and the fact that surface flow generated from lakeshore parks and properties contributes pollutants as well, and the strategy becomes untenable when compared to distributed systems. Smaller-scale systems, installed in close proximity to pollutant sources, would be more likely to manage loading with a less intensive need for upkeep. In addition, these systems can be oriented in a way so as to manage surface flows that otherwise would not be captured in a piped system. From a standpoint of

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

fostering community involvement, small scale systems and balanced removal of lawn areas will serve as a demonstration for homeowners in terms of what could be accomplished on residential sites. End-of-pipe treatment systems and full lawn removals, by their nature, do not necessarily translate well to implementation on individual sites.

6. If applicable, provide an estimate of the cost of the proposed project.

The total estimated cost for this project is \$512,000. For more information, please see Table 1 attached to this grant application.

7. For infiltration sites, provide a discussion of the site suitability for the proposed project.
- Include soil suitability to the site and depth to ground water if known.
 - Include known site characteristics that would likely yield a suitable site.
 - Include the plan for further investigation that you will carry out in the design phase.

In the process of watershed scale projects examined by the City of Bellingham, 100 test pits were dug within the City's portion of the watershed. Of these, two test pits are within the project area and one is directly in the center of the proposed infiltration/treatment facility. This test pit shows loamy top soils with sandy subsurface soils, with a long-term infiltration rate at least 0.25in/hr trending toward 0.5in/hr in the subsoil. Other test pits dug for homeowner projects, at similar elevations and setbacks from the Lake, have shown a measurable infiltration rate greater than 0.7in/hr. Test pits excavated for new development projects which found sand were able to justify a 2.0in/hr infiltration rate through that sand layer. This is the expected rate of infiltration to be found in the subsoil underlying the infiltration areas.

Groundwater in the most accurate and closest test pits was found at 4.5' below surface level. This will provide adequate separation for the proposed facilities.

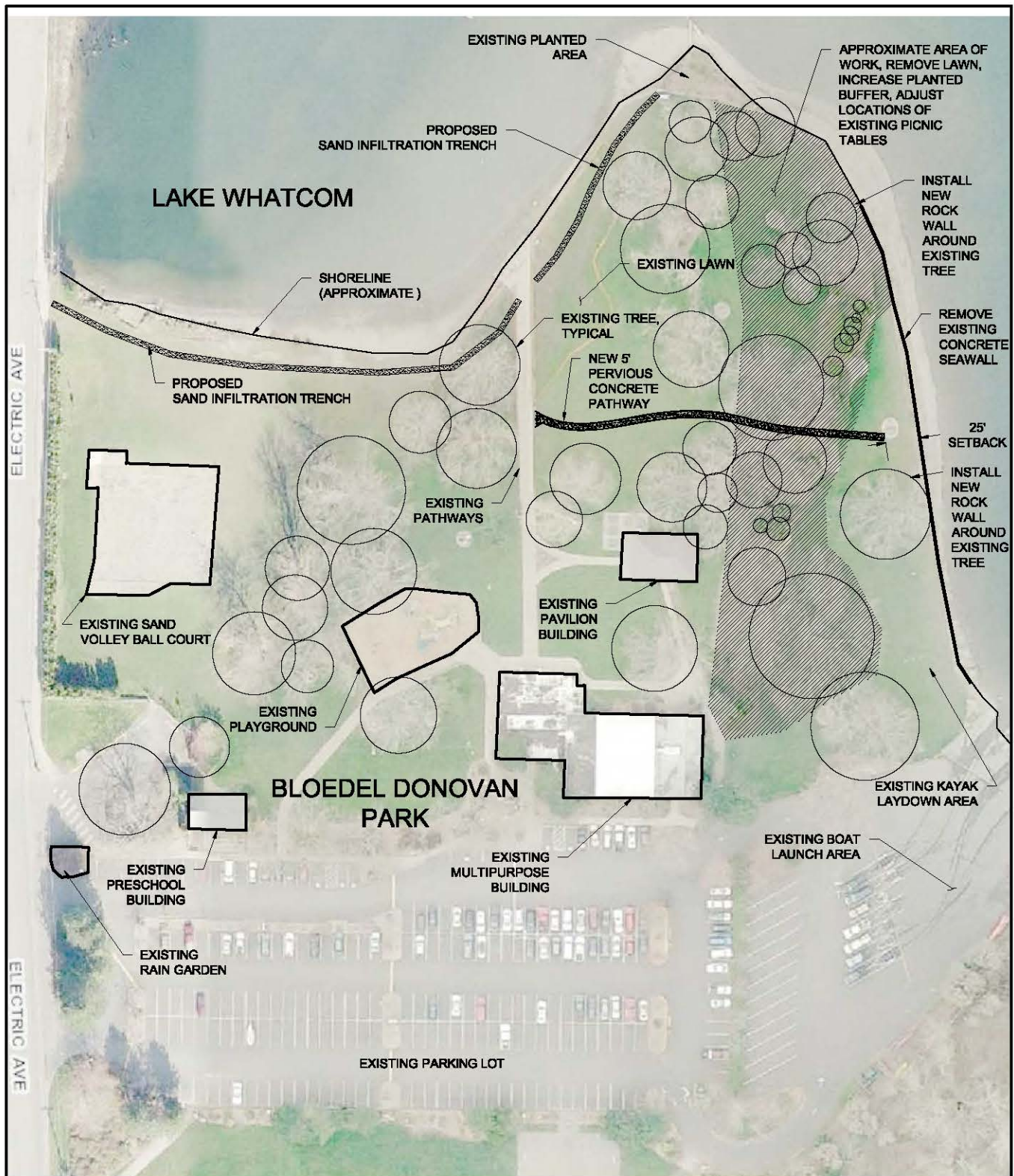
Due to the known presence of sand underlying most of the park, and the removal of the compacted topsoil which currently occupies the infiltration/treatment areas, the soil is expected to infiltrate at a rate sufficient for treatment. The backfilled sand will be specified to meet design infiltration rates necessary for pollutant removal.

The design phase of the project will involve more in-depth geotechnical investigations for final locations of the facilities and total depth of the infiltration areas. The areas could also be oversized to accommodate for unknown or undetermined soils to provide the best possible treatment level.

8. Have the following activities been completed? If so, please check the box next to the completed items:

- ☐ Application for SERP or SEPA approval
- ☐ Receipt of SERP or SEPA DNS or MDNS
- ☐ Cultural Resources approval (Executive Order 05-05)
- ☐ Detailed pre-design/Engineering report. If completed attach copy to application.
- ☐ Construction Plans and Specifications (% complete)
- ☐ Council/Commission approval to advertise for bid

Part 2
FY 2012 Stormwater Retrofit and LID Grant Program
THIS CONCLUDES PART 2



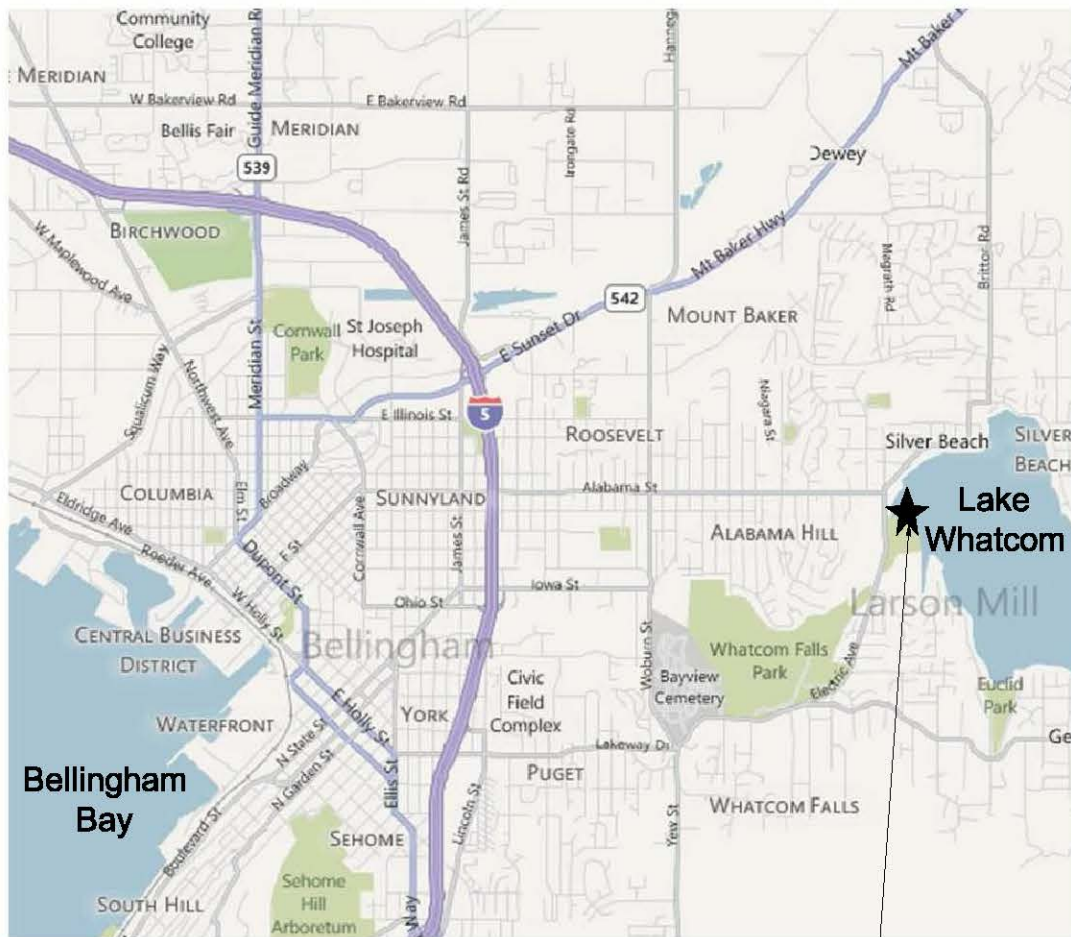
NOTES:

1. INFORMATION PROVIDED IS PRELIMINARY
2. THIS IS NOT A FINAL DESIGN
3. THIS IS NOT A SURVEY

**BLOEDEL DONOVAN
SHORELINE RESTORATION
November 14, 2011**

**CITY OF BELLINGHAM
Project Location Map
Scale: Not to Scale**

**Figure
1**



Project Location

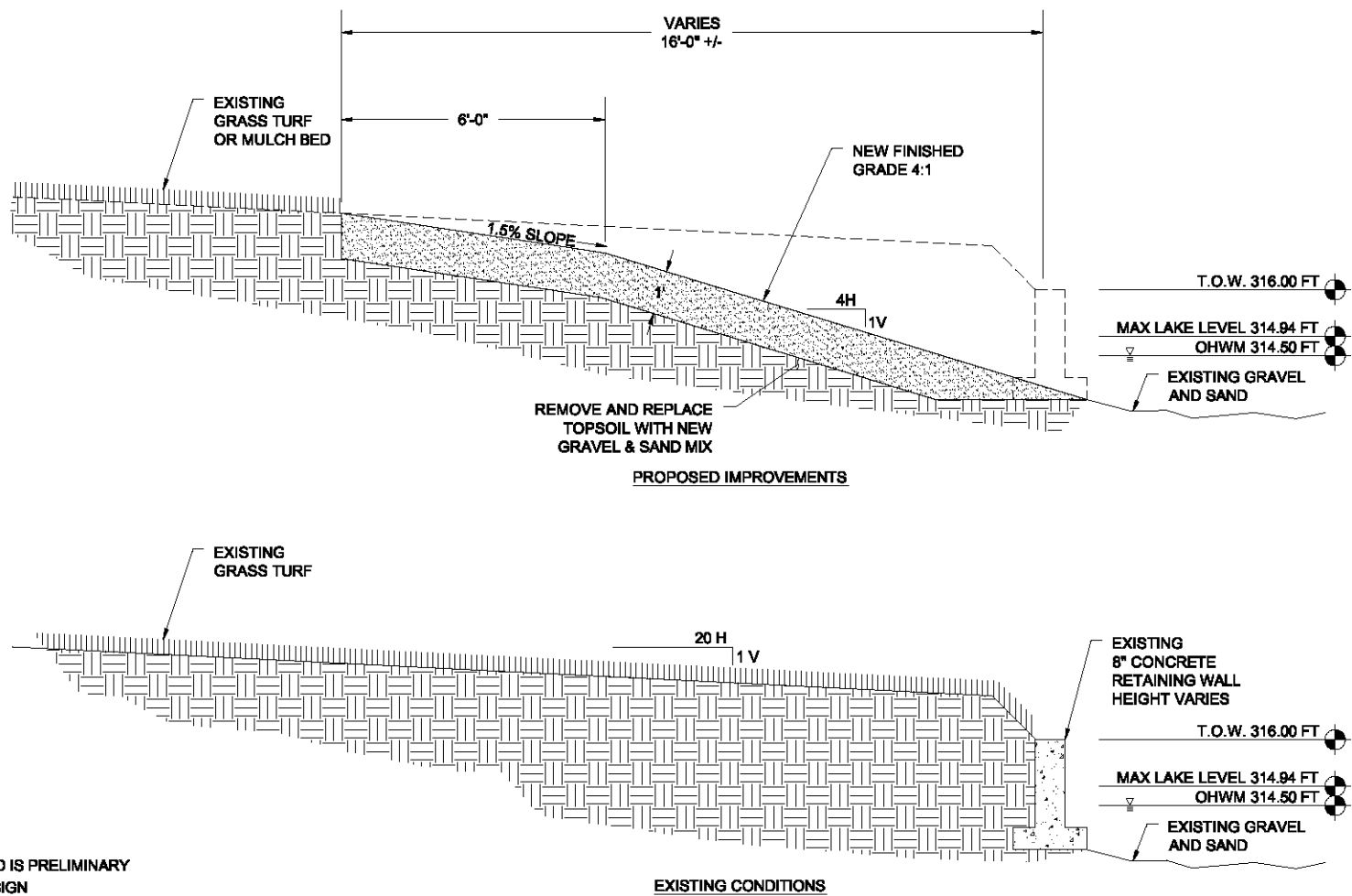
NOTES:

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**BLOEDEL DONOVAN
SHORELINE RESTORATION
November 1, 2011**

**CITY OF BELLINGHAM
Vicinity Map
Scale: Not to Scale**

**Figure
2**



NOTES:

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**BLOEDEL DONOVAN
SHORELINE RESTORATION
November 8, 2011**

**CITY OF BELLINGHAM
Shoreline Restoration
Scale: Not to Scale**

**Figure
3**



NOTES:

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BLOEDEL DONOVAN
SHORELINE RESTORATION
November 8, 2011

CITY OF BELLINGHAM
Failing Retaining Wall
Scale: Not to Scale

Photo
1



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BLOEDEL DONOVAN
SHORELINE RESTORATION
November 8, 2011

CITY OF BELLINGHAM
Failing Retaining Wall
Scale: Not to Scale

Photo
2



NOTES:

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BLOEDEL DONOVAN
SHORELINE RESTORATION
November 8, 2011

CITY OF BELLINGHAM
Failing Retaining Wall
Scale: Not to Scale

Photo
3



NOTES:

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BLOEDEL DONOVAN
SHORELINE RESTORATION
November 1, 2011

CITY OF BELLINGHAM
Failing Retaining Wall
Scale: Not to Scale

Photo
4



NOTES:

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BLOEDEL DONOVAN
SHORELINE RESTORATION
November 8, 2011

CITY OF BELLINGHAM
Park Shoreline
Scale: Not to Scale

Photo
5

TABLE 1									11/14/11
Stormwater Retrofit - Bloedel Donovan Park: Preliminary Cost Estimate (Order-of-Magnitude Level Estimate)									
					SUBTOTALS				ROUNDED
Task 1: Project Administration/Management									
Project Manager & Support Staff Salary, Misc Expenses				\$ 10,000	\$ 10,000	----->			\$ 10,000
Task 2: Design and Permitting Activities									
Archaeology				\$ 3,500					
Survey				\$ 10,000					
Geotech				\$ 7,500					
Permits				\$ 2,500					
Design Consultant	20.0%			\$ 61,948					
Biologist CAO Report				\$ 5,000					
Bid Advertisement				\$ 500					
Misc Expenses				\$ 1,500	\$ 92,448	----->			\$ 92,000
Task 3: Construction Management									
Project Manager Salary				\$ 7,500					
Materials Testing				\$ 5,000					
Park Inspector				\$ 5,000					
Stormwater Inspector				\$ 2,500					
Misc Expenses				\$ 1,500	\$ 21,500	----->			\$ 22,000
Task 4: Construction									
	QTY	UNIT	UNIT PRICE	AMOUNT	SUBTOTALS				ROUNDED
<u>Mobilization</u>	1	LS	\$ 10,000.00	\$ 10,000	\$ 10,000				
<u>Flagging</u>									
Labor	16	HR	\$ 40.00	\$ 640	\$ 640				
<u>Erosion Control</u>									
Silt Fence	1000	LF	\$ 5.00	\$ 5,000	\$ 5,000				
<u>Construction Entrance</u>									
8" Quarry Spalls, 12" Depth									
Install	81	TON	\$ 16.00	\$ 1,300					
GeoTextile	139	SY	\$ 1.00	\$ 139					
Remove	81	TON	\$ 16.00	\$ 1,300	\$ 2,739	\$ 20	SY		
<u>Sand Infiltration Trench</u>									
Excavation, Including Haul	286	CY	\$ 25.00	\$ 7,160					
Install Drainage Sand/Gravel	286	CY	\$ 40.00	\$ 11,456					
Filter Fabric	477	SY	\$ 2.00	\$ 954	\$ 19,570	\$ 36	per LF		
<u>Planting Area</u>									
Remove Sod	0	SY	\$ 1.44	\$ -					
Amended Soils	0	CY	\$ 30.00	\$ -					
Cultivating (rototilling)	0	SF	\$ 0.22	\$ -					
Sheet Mulch	897	CY	\$ 35.00	\$ 31,380					
Trees	1500	EA	\$ 15.00	\$ 22,500					
Shrubs	1500	EA	\$ 8.00	\$ 12,000					
Ground Cover	0	EA	\$ 5.00	\$ -					
2 Year Plant Establishment	1	LS	\$ 20,000.00	\$ 20,000	\$ 85,880	\$ 77,268	per Acre		
<u>Shoreline Restoration</u>									
Concrete Seawall Remove and Dispose	500	LF	\$ 50.00	\$ 25,000					
Excavate Top Soil, including haul	644	CY	\$ 35.00	\$ 22,556					
Place and Compact new Beach Sand, Gravel	285	CY	\$ 40.00	\$ 11,407	\$ 58,963	\$ 118	per LF		
<u>Other</u>									
Relocate Existing Picnic Tables	9	EA	\$ 1,500.00	\$ 13,500					
Install New Interpretive Signs	2	EA	\$ 2,500.00	\$ 5,000					
Porous Concrete Paving	1297	SF	\$ 8.00	\$ 10,376					
Site Restoration	1	LS	\$ 20,000.00	\$ 20,000	\$ 48,876				
<u>Subtotal</u>				\$ 231,668					
Taxes	8.7%			\$ 20,155	\$ 20,155				
Contingency	25.0%			\$ 57,917	\$ 57,917				ROUNDED
				\$ 309,740		----->			\$ 310,000
Task 5: Project Closeout									
Project Manager & Supporting Staff Salary, Misc Expenses				\$ 3,000	\$ 3,000				
Park Management/Maintenance Study and Plan				\$ 75,000	\$ 75,000	----->			\$ 78,000
TOTAL					\$ 511,688	----->			\$ 512,000

