

City of Puyallup

**Clarks Creek Targeted Outfall Retrofit
Project**



**Fiscal Year 2012 Statewide Stormwater
Grant Program Application**



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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.)*

Clarks Creek Targeted Outfall Retrofit Project

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

City of Puyallup

3. APPLICANT FEDERAL IDENTIFICATION NUMBER:

Federal ID No.: 91 600 1274

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

Name: Mark Palmer, P.E.

Title: City Engineer

Telephone Number: 253-435-3606

E-Mail Address:

Fax Number: 253-841-5484

mpalmer@ci.puyallup.wa.us

Mailing Address

Agency: City of Puyallup

Address: 333 S Meridian

City: Puyallup State: WA Zip Code: 98371

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

Name: Mark Palmer, P.E.

Title: City Engineer

Telephone Number: 253-435-3606

E-Mail Address:

Fax Number: 253-841-5484

mpalmer@ci.puyallup.wa.us

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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.

Part 1

FY 2012 Statewide Stormwater Grant Program Application

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)? Fecal Coliform 7498; pH 7499, pH 7511, Dissolved Oxygen 7510, Dissolved Oxygen 47578, Fecal Coliform 7507

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. C(2) – Reduce & Control Sources of Pollution; Urban Stormwater Runoff

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

- | | |
|-------------------------------------------------------|------------------------------------------------|
| <input checked="" type="checkbox"/> Freshwater rivers | <input type="checkbox"/> Direct marine water |
| <input 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: 05/01/2012

Estimated Completion Date: 06/30/2014

PROJECT Length: 26 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 Vector 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.

Part 1

FY 2012 Statewide Stormwater Grant Program Application

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? 0 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>\$743,455</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>\$734,891</u>															
<i>Ecology Funding Request</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: http://www.ecy.wa.gov/programs/wq/funding/FundingPrograms/OtherFundingPrograms/StWa12a/FY12aStWa.html	<u>\$551,168</u>															
Other Funds in PROJECT Identify secured source(s) of funds: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">State/Federal agency</td> <td style="width: 40%;"><u>City of Puyallup SW Systems Imp. Budget</u></td> <td style="width: 30%; text-align: right;"><u>\$ 173,229</u></td> </tr> <tr> <td>State/Federal agency</td> <td><u>WSU-Puyallup</u></td> <td style="text-align: right;"><u>\$19,058</u></td> </tr> <tr> <td>State/Federal agency</td> <td>_____</td> <td style="text-align: right;">\$ _____</td> </tr> <tr> <td>Local Agency</td> <td>_____</td> <td style="text-align: right;">\$ _____</td> </tr> <tr> <td>Interlocal contribution</td> <td>_____</td> <td style="text-align: right;">\$ _____</td> </tr> </table>	State/Federal agency	<u>City of Puyallup SW Systems Imp. Budget</u>	<u>\$ 173,229</u>	State/Federal agency	<u>WSU-Puyallup</u>	<u>\$19,058</u>	State/Federal agency	_____	\$ _____	Local Agency	_____	\$ _____	Interlocal contribution	_____	\$ _____	
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State/Federal agency	_____	\$ _____														
Local Agency	_____	\$ _____														
Interlocal contribution	_____	\$ _____														

Part 1

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):

The Clarks Creek Targeted Outfall Retrofit Project will install sedimentation and filtration devices at six or more Clarks Creek outfalls, effectively treating nearly 20% of the drainage basin and reducing pollutant loading to the TMDL-affected Clarks Creek. Outfall selection will be based on stormwater quality benefit, feasibility, and cost-benefit analysis.

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.

Mark Palmer, P.E.	
Printed Name	Signature
City Engineer	11/18/2011
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.)

The Clarks Creek Targeted Outfall Retrofit Project will analyze and prioritize stormwater outfalls in the TMDL-affect Clarks Creek basin and retrofit at least six (6) of the highest-ranked outfalls (Attachment A). Prioritization will be based on analysis of the overall water quality benefits, a cost-benefit analysis, and the feasibility of retrofit.

Installation of stormfilter vaults will provide stormwater quality improvements in the TMDL-affected Clarks Creek basin. Use of stormfilters is expected to provide sediment, nutrient, and organic material filtration. Reduction in loading of these urban runoff pollutants will provide several water quality improvement benefits to the system, including a reduction in sediment oxygen demand (SOD), elodea nuisance growth, and reduced DO levels in the stormwater runoff. Reduction in nutrient loading to the creek will allow for a higher DO-carrying capacity of the waters.

These efforts will directly support the Clarks Creek DO TMDL (expected publish date: January 2012). The TMDL implementation activities include wasteload allocations for the City to reduce the volume of untreated stormwater into Meeker Creek – a tributary of Clarks Creek – by 50%. This project will retrofit at least six of the 35 total outfalls in the basin. It is anticipated for the selected outfalls to be those that would provide the largest stormwater volume treatment and effective water quality improvement benefit – targeting 20% of the drainage area.

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 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.***

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

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.

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.

Task 2: Design and Permitting Activities

- A. *Design* – This project was conceived through discussions with Clarks Creek Initiative members and WSU-Puyallup as Clarks Creek Monitoring efforts are now underway. The Initiative group includes several members from organizations obligated to activities in the Clarks Creek DO TMDL Implementation Plan. The City's wasteload allocation in the current (draft) DO TMDL includes a reduction in geomorphically significant flows into Meeker and Clarks creeks by 50% - specifically, untreated stormwater flows.

This project will include ranking and prioritization of stormwater outfalls on Meeker and Clarks creeks (Attachment A). Included in the ranking process will be the contribution of stormwater volume, related pollutants, outfall location, potential for water quality improvement through filtering, feasibility for retrofit, and an overall cost-benefit analysis to compare the water quality benefits that would be realized

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

through retrofitting.

The City will work with partner WSU-Puyallup (Attachment B) to review and rank the outfalls and provide a final selection of the outfalls to retrofit. The City is fortunate to be part of the Clarks Creek Initiative group which includes organizations that not only have an invested interest in Clarks Creek, but have been willingly working together to coordinate efforts, resources, and projects to provide impactful and sustainable changes to Clarks Creek. Recently, this group was named with the Clarks Creek Watershed as EPA's Region 10 Green Infrastructure Community – a designation made to only one organization/group in each of the ten national EPA regions.

With 39 outfalls currently identified on Meeker and Clarks creeks, this project will select at least six outfall locations for retrofit. Initial project design includes consideration for 11-cartridge systems, which would be able to manage up to 80 GPM. Each vault and filter location will be appropriately sized according to the drainage area it services.

- B. *Permitting* – Retrofit of the outfalls will require SEPA review, as well as a substantial shoreline permit for any outfalls select for retrofit on Clarks Creek. The City will begin compilation of the permit application materials once selection of the outfalls is complete. To ensure that the permitting process can be completed with as few delays as possible, City staff will schedule a pre-application meeting with City of Puyallup Development services in early 2012. Conceptual plans showing several of the potential outfall retrofit locations will be provided for reference and comment.

Per the requirements of the grant and as a part of the SEPA process, a cultural resources assessment will be initiated in coordination with the permitting process with an on-call contractor. The SEPA and permit review process will likely be completed by fall 2012.

Period of performance: May 2012 – September 2012

Task 3: Construction Management

Included in management of the construction process will be development of bid package, bid awarding, council presentation and approval, construction meetings, site visits, contract close-outs and related construction-management activities.

- A. *Bid Package* - Typical bid package, with specifications manual and construction plans, will be assembled. The preference will be for a single contract to complete all retrofit installations. Prevailing wages will be applied to the contract. A refined engineer's cost estimate will be produced as a check on validity of bids received. The project will be advertised in appropriate trade journals and local newspapers, as well as the City of Puyallup's legal notice paper, the Puyallup Herald. Plans and specifications will be made available through common plan centers and at City of Puyallup offices. Advertisement will be four to five weeks before bid opening to allow contractors sufficient time to produce responsive bids.

Bid opening, contractor reference checks and award of the construction contract should be completed by November 2012. Verification of experience and past performance in completing projects without incident, specifically related to stormwater protection and erosion and sediment control will occur before award of the contract. Notice to proceed should be provided no later than January 15th 2013.

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

Bid packages and final bid plans will be produced upon successful notice of offer from the Department of Ecology. Plans will be refined prior to that time such that only minimal plan changes are expected.

- B. *Construction meetings, site visits, and inspections* – Pre-construction meetings will be held prior to the initiation of work at each outfall locations as well as weekly meetings during each site installation. Site visits will be completed by the residing Professional Engineer, to ensure that work is completed according to the design and specifications. Details of the quality assurance that will be completed during construction are outlined in the task item below, and will be drafted in a Construction Quality Assurance Plan in early 2012. Each installation will be inspected by the City public works inspector for appropriate compliance and review.
- C. *Construction Quality Assurance Plan* – A Construction QAP will be developed in early 2012 that will detail the procedures to be followed during construction of the Clarks Creek Targeted Stormwater Outfall Retrofit Project. The plan will include details on staff responsible for various construction quality assurance tasks, documentation requirements, material production specifications and QA requirements, and QA deliverables. This document will also reference appropriate construction BMPs, and guidelines listed in the Western WA Stormwater Management Manual.

Performance Period: September 2012- October 2013

Task 4: Construction Included in the construction task of this project will be development of the construction schedule, including coordination of the various project locations, site prep work such as excavation, and installation and putting each unit into service.

- A. *Scheduling* - Construction will begin in early 2013, with execution of contract with the selected company. Construction will continue through October 2013, or until all work is completed. A construction schedule will be developed during the initiation of the construction contract that will allow for appropriate scheduling based on weather and material-availability limitations. It is anticipated that the excavation, site preparation, and vault and filter installation for each outfall location can be completed in 21 days.
- B. *Excavation* – The outfall structures included in this project vary in material type and size. Appropriate construction BMPs will be applied to protect the stormwater system from pollutant loading during the construction process. This will include the application of appropriate erosion and sediment control, inlet protection and other precautions detailed in the Western Washington Stormwater Management Manual.
- C. *Installation* – Installation will be monitored according to the Construction QAP, outlined in Task 3 above. Scheduling of the installation, as discussed in item A of Task 4, above, will be dependent upon weather and material procurement limitations, if any.

Performance Period: January 2013-October 2013

Task 5: Monitoring This project will include monitoring elements to measure and compare the resulting improvements in water quality introduced to Clarks and Meeker Creeks.

- A. *QAPP Development* – A Quality Assurance Project Plan will be developed and reviewed in accordance with

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

Ecology standards and requirements. Plan development will reference Ecology guidance publications as well as modeled after similar WSU stormwater monitoring documents. The plan will be provided to Ecology for review and revision as required.

- B. *Data Collection* – This project will include coordination and partnership with WSU-Puyallup’s current Clarks Creek Monitoring Program. This program provides monitoring and analysis of water samples gathered from twelve (12) sample locations located on Clarks Creek. Samples will be collected at the specified collection points, and analyzed for: TSS, pH, DO, and FC on a monthly basis throughout the course of this project. Data will be provided to Ecology as requested.
- C. *Data Analysis* – WSU-Puyallup’s Clarks Creek Monitoring Program has been actively collecting data on a monthly basis since September 2011. Data collected after installation of the various stormfilters will be compared to pre-retrofit data and analyzed for changes in the specified pollutants.

To address the current TMDLs for Clarks Creek, special note will be taken to review changes in fecal coliform (FC) and dissolved oxygen (DO) levels. Use of stormfilters is expected to provide sediment, nutrient, and organic material filtration. Reduction in loading of these urban runoff pollutants will provide several water quality improvement benefits to the system, including a reduction in sediment oxygen demand (SOD), elodea nuisance growth, and reduced DO levels in the stormwater runoff. Reduction in nutrient loading to the creek will allow for a higher DO-carrying capacity of the waters.

- D. *Maintenance Requirements* – Filter cartridge replacement is based on the performance of the system, flow volume, quality of influent, and size of filter system. To insure the installed storm vaults provide maximum filtration performance, the systems and cartridges will be inspected on a monthly basis during the first year of operation. An installation schedule will be developed for subsequent years based on performance and replacement frequency during this period. A formal maintenance plan will be developed that will outline manufacturer recommended filter replacement schedule(s), inspection parameters, repair guidelines, and system lifecycle analysis.

Maintenance inspections will include logging of data and activities to be used in conjunction with water quality sampling data analysis to provide correlation between filter life, usage, and effective removal rates.

Performance Period: May 2012- June 2014

2. PROPOSED BUDGET (up to 100 points)

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.

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

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.
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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>10,757</u>	\$ <u>10,757</u>	<u>26</u>
2. Design and Permitting Activities	\$ <u>43,424</u>	\$ <u>34,860</u>	<u>5</u>
3. Construction Management	\$ <u>41,680</u>	\$ <u>41,680</u>	<u>14</u>
4. Construction	\$ <u>558,274</u>	\$ <u>558,274</u>	<u>10</u>
5. Monitoring	\$ <u>89,320</u>	\$ <u>89,320</u>	<u>26</u>
Total costs and months needed to complete:	\$ <u>743,455</u>	\$ <u>734,891</u>	<u>26</u>

TOTAL Eligible Cost by Budget Object

Salaries:	\$ <u>96,817</u>	
Benefits:	\$ <u>0</u>	
Indirect costs:	\$ <u>0</u>	(May include up to 25% of employee salaries and benefits)
Contracts:	\$ <u>620,754</u>	
Materials, goods, and services (list major item):	\$ <u>9,000 (survey)</u>	
	\$ <u>8,320 (lab analysis)</u>	
Equipment (list major items):	\$ _____	
	\$ _____	
	\$ _____	
Travel:	\$ _____	
Other (please outline):	\$ _____	
	\$ _____	
Total Eligible Cost:	\$ <u>734,891</u>	

Match Source

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

Funding Source: Stormwater Systems Imp. Budget \$ 164,665

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

Funding Source: <u>WSU-Puyallup Staff Salaries</u>	\$ <u>19,058</u>
Funding Source: _____	\$ _____

Describe the status of matching funds: Committed

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.

The cost estimates were derived by Joy Rodriguez, with guidance and review by Mark Palmer, P.E., who has extensive experience in cost estimating projects for public and private sector jobs. The quantities of materials were derived based on 11-cartridge systems and related required vault sizes and construction procedures and requirements. The latest summary of bid items prices for the Olympic Region of WSDOT, 2008-2009, were used to establish unit prices. In most cases, the higher of the Olympic Region or statewide average low bid was used in the cost estimate to be conservative. Given the current favorable bidding environment, a slightly aggressive mobilization of 5% of construction cost was used. A design contingency of 10% was used, which should be sufficient given the relative simplicity of the project.

Labor estimates for team members were based on the scope description and past experience with similar projects. Labor estimates were also reviewed by team members to verify the estimates as reasonable. The detailed cost estimates are enclosed as Attachment C – Cost Estimates.

Final selection of the specific targeted outfalls for retrofit will include a ranking and prioritization process that will include a cost-benefit analysis for the water quality improvement relative to cost.

Match for this project will be with funds from the City of Puyallup Stormwater systems Improvement Budget, as well as committed WSU-Puyallup staff salaries. Where possible, additional grant funds will be sought to include additional funding partners and expand the reach and interest for this program.

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.

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

<p>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).</p>	<p>Up to 100 pts.</p>
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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

There are 303 (d)-listed water bodies in the watershed of this grant application, as well as endangered salmon species and impaired and degraded habitat as a result of human activities and urban development. TMDLs are completed for the Puyallup and White rivers and the DO TMDL is nearly complete for Clarks Creek, with a fecal coliform TMDL already in place (Attachment D).

The Clarks Creek Targeted Outfall Retrofit Project will provide water quality benefits to Meeker and Clarks Creek by reducing sediment, nutrient, and organic material loading in the creeks which will result in increased DO-carrying capacity of the waters, reduce SOD, and reduce sediment and nuisance elodea growth – all DO-reducing factors. This project will retrofit at least six of the 35 total outfalls in the basin. It is anticipated for the selected outfalls to be those that would provide the largest stormwater volume treatment and effective water quality improvement benefit – targeting 20% of the drainage area. This project alone could meet 40% of the City’s implementation activity requirement for the DO TMDL – reducing geomorphically significant flows by 50% (untreated stormwater flows).

The lasting effect of this project will be the continued filtration of large volumes of stormwater prior to outfall to Meeker and Clarks creeks. As discussed in Task 5, maintenance requirements, and to be outlined in the Maintenance Plan, filter cartridges are to be inspected and replaced as needed to ensure proper continued function and maintenance of the systems.

Recently the City implemented the use of handheld Juno units and Cartegraph system that allow for in-field logging of stormwater asset inspections. Deployment of this system will provide added review and

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

confirmation that the necessary filter maintenance and replacement is completed.

As listed in the Puget Sound Action Agenda, Section C(2), this project uses “a comprehensive, integrated approach to managing urban stormwater and water runoff to reduce stormwater volumes and pollutant loadings” including “manage stormwater runoff in urban and urbanizing areas to reduce stormwater related impacts”.

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 work.	Up to 30 pts.
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 Clarks Creek Targeted Outfall Retrofit Project will be developed with support of dedicated Stormwater Department staff, and partnership with WSU-Puyallup. While other individuals will participate in the project, key team members are listed below.

1) **Mark Palmer, City Engineer, City of Puyallup**

Qualifications: Mark Palmer has been a practicing Civil Engineer for over 25 years. He has worked in the public sector, private sector and owned his own civil engineering and landscape architecture firm. Mark developed an interest in Low Impact Development and sustainable design, eventually becoming one of the Northwest’s leading proponents of porous asphalt. He has been presenting porous asphalt construction and specifications as part of the WSU Extension’s Low Impact Development seminar series and is continuing to participate as a technical advisor to WSU Puyallup’s Low Impact Development Stormwater demonstration project. He also achieved LEED accreditation in 2008. Mark is responsible for Public Works-related engineering issues in the City, including a heavy role in the Stormwater Management functions such as NPDES implementation, coordinating Low Impact Development into City Code with Development Services and city-wide planning.

Responsibilities: Mark will be the grant manager and Professional Engineer overseeing all work, design and construction for this project and will work with the Stormwater Engineer and Stormwater Engineer Technician.

Time on Project: Projected time commitment for all team members is shown in the cost estimates,

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

Attachment C.

2) Joy Rodriguez Stormwater Engineering Technician, City of Puyallup

Qualifications: Joy Rodriguez has been a degreed engineer for over 10 years. She has worked in both the public and private sector, with the most recent year devoted to civil engineering and project management work focused on stormwater management for the City of Puyallup. Joy has recently successfully supported the grant management of multiple City-awarded grants such as two Ecology GROSS grants, for the Stormwater Technical Resource Center and the re-starting of Ecology's TAP-E Program. Currently Joy is managing, assisting, and developing contracts for several stormwater grants for the City that vary from smaller-scale riparian restoration projects, to Local Source Control with Ecology, and a neighborhood-block wide LID retrofit project.

Responsibilities: Joy will be the primary grant contact for the City and will manage the grant agreement and track and produce reports. Related to project-specific activities, Joy will provide support services in drafting of design plans, required permit applications, bid packages, sourcing contractors for required reviews, management of subcontracts, and providing on-the-ground support for coordination of construction activities.

Time on Project: Projected time commitment for all team members is shown in the cost estimates, Attachment C.

3) Steve Carstens, P.E., Stormwater Engineer, City of Puyallup

Qualifications: Steve Carstens has been a practicing civil engineer for over 10 years. He has worked in both the public and private sectors. Prior to professional work as a Civil Engineer, Steve also brings on-the-ground experience of managing, estimating, and scheduling of construction projects. He has been a project manager on over 25 construction projects, mostly with a focus on earthwork, stormwater, bridge, building, and sanitary sewer construction. Steve is responsible for stormwater issues in the City, including leading NPDES implementation, advocating Low Impact Development for private development projects, and coordinating with other City departments for stormwater basin planning.

Responsibilities: Steve will be the primary, active Professional Engineer on this project. He will provide engineering designs, development of specifications, bid packages, coordination with construction teams, perform site visits and inspections, and be involved in other construction activities.

Time on Project: Projected time commitment for all team members is shown in the cost estimates, Attachment C.

4) Tanyalee Erwin, , WSU-Puyallup Research and Extension Center

Qualifications: Tanyalee Erwin is Manager of the Washington Stormwater Center and a Research Associate at Washington State University Puyallup Research and Extension Center. She holds dual roles as a faculty member working on fecal coliform pollution in salmon-bearing streams and as the manager and developer of the Washington Stormwater Center which she helped create in collaboration with the City of Puyallup, University of Washington – Tacoma and a team of businesses, local governments and environmental organizations. Most recently, she was senior staff on a project to develop the nation's largest Low Impact Development research and education facility at the WSU Puyallup campus. She joined the WSU team in 2005 after a previous career in management and marketing where she was responsible for multiple departments and staff and large-scale corporate budgets. She holds a BA from Northwestern University, a BS from University of Washington, an MBA from Pacific Lutheran University and an MS from Washington State University. At present, she is developing new programs for the Washington Stormwater Center that service business and industrial permittees (Business Resource Program) and eastern Washington Phase Two stormwater permittees (Municipal Resource Program) as well as continuing work on BMPs for fecal coliform reduction in stormwater outfalls. She is also working to create a STEM education program at WSU Puyallup with the

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

Puyallup School District that focuses on wetlands, watersheds, salmon biology and LID research.
Responsibilities: Tanyalee will supervise WSU staff and contribute to the ranking and prioritization of the potential outfall locations for retrofit, and provide will including a link and additional line of communication with the Clarks Creek Initiative group. She and WSU staff will also be providing review and analysis of water quality sampling data secured and processed by WSU-Puyallup staff also dedicated to the project.
Time on Project: Projected time commitment for all team members is shown in the cost estimates, Attachment C.

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.

The city of Puyallup actively seeks opportunities to design and implement projects that will provide water treatment and water quality improvement to the TMDL-affected waterways in the jurisdiction.

As an active member of the EPA-recognized Clarks Creek Initiative Group, comprised of local government, higher education, tribal representation, and citizen groups, this project has been discussed a key element to implement on the onset of the Clarks Creek DO TMDL and Clarks Creek Monitoring Program. WSU-Puyallup has committed to support and partnership on this project through contribution of dedicated staff time and coordination of monitoring efforts (Attachment B).

The DO TMDL is anticipated to be completed in January 2012; with it will come required implementation activities for the City including reduction in untreated stormwater flows to the Clarks Creek basin (Attachment D). This project will address approximately 40% of that requirement by providing filtering of several stormwater outfalls to the basin.

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

6. READINESS TO PROCEED

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>

A preliminary inventory of the Clarks and Meeker creek stormwater outfalls has been completed (Attachment A). This document will provide the basis for additional data collection and drainage area analysis that will be used in the ranking and prioritization of the potential outfalls for retrofit.

Retrofit of the outfalls will require SEPA review, as well as a substantial shoreline permit for any outfalls select for retrofit on Clarks Creek. The City will begin compilation of the permit application materials once selection of the outfalls is complete. To ensure that the permitting process can be completed with as few delays as possible, City staff will schedule a pre-application meeting with City of Puyallup Development services in early 2012. Conceptual plans showing several of the potential outfall retrofit locations will be provided for reference and comment.

Per the requirements of this grant and as a part of the SEPA process, a cultural resources assessment will be initiated in coordination with the permitting process with an on-call contractor. The SEPA and permit review process will likely be completed by fall 2012.

In addition, the City is ready to proceed with appropriate staffing to dedicate to the success of this project – fully-achievable and supported by a recent department re-organization which now includes a City Engineer with dedicated support to stormwater management, a Stormwater Engineer, and a Stormwater Engineering Technician.

7. EARLY ADOPTERS OF NEW REGULATIONS and TECHNOLOGY

Scoring Guide (choose one option)

Up to a Total of 50 Points

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

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 developed and implemented an active Stormwater Management Plan (SWMP) in 2009, with Ordinance 2951 (Attachment E) and reviews and revises it annually to appropriately address new development, regulatory requirements, and projects outlined in the Storm Drainage Comprehensive Plan.

Attached as exhibit (Attachment F) is the 2011 Public Education and Outreach Plan. An updated plan will be developed and implemented prior to 2012 that will include continuation of several of the 2011 program elements, as well as expansion of the outreach to local businesses and education to private homeowners on LID techniques that can be implemented on the residential level.

IDDE is a crucial part of stormwater management and provides for removal of pollutant loads from the stormwater system through implementation of the program. The City currently holds annual IDDE training and implements an IDDE Program (Attachment G).

City of Puyallup Ordinance No. 2938 (Attachment H) was adopted in 2009 and prohibits illicit discharges and/or dumping into the City's Stormwater system as well as prohibiting illicit connections, and also identifying allowed discharges and defines the system.

Over the past decade the City has dedicated staff resources to mapping various elements of the MS4 including outfalls, pipes, ditches, and ponds. The attached diagram (Attachment I) shows an overview of the system, with various stormwater assets noted. Reference to this mapping is used frequently to help identify areas of Mapped MS4

The city of Puyallup has been a strong proponent of LID, and has implemented several projects over the past few years that include the WSU LID stormwater retrofit and research center and various LID elements. City Hall, constructed in 2008, is certified LEED Gold and includes LID elements such as rain water harvesting and reuse (irrigation), green roof,

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

and several rain gardens and swales.

Two-thousand, eleven marked the third year of the Puyallup Rain Garden Program. To date, the City has installed 54 rain gardens in various neighborhoods, including two in the Clarks Creek basin, and 3 in the Puyallup River basin. Included in the program have been permeable pavement installations, use of rain barrels, and soil amendment and riparian plantings.

Recently the City has begun retrofitting roadway shoulders on an identified-need basis, by installing porous gravel shoulders. This application increases public safety by removing areas of road-side standing water as well as providing stormwater management and water quality benefits.

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).

\$56,572

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

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 Technical Project Manager for the Clarks Creek Targeted Outfall Retrofit Project is Mark Palmer, P.E., LEED AP, Puyallup City Engineer. Mark has been a practicing Civil Engineer for over 25 years. He has worked in the public sector, private sector and owned his own civil engineering and landscape architecture firm. Mark developed an interest in Low Impact Development and sustainable design, eventually becoming one of the Northwest's leading proponents of porous asphalt. His presence on the City of Puyallup staff provides additional strength to the City's rising reputation as a forward-thinking stormwater management community and proponent of LID. Mark has been presenting at the WSU Extension's Low Impact Development seminar series since its inception, and is continuing to participate as a technical advisor to WSU Puyallup's Low Impact Development Stormwater demonstration project. He also achieved LEED accreditation in 2008. Mark is responsible for Public Works-related engineering issues in the City, including a heavy role in the Stormwater Management functions such as NPDES implementation, coordinating Low Impact Development into City Code with Development Services and city-wide planning.

Mark will be the grant manager and Professional Engineer for this project including lead on design and construction as well as oversee City Staff contributing to this project such as the Stormwater Engineer and Stormwater Engineer Technician.

Mark Palmer, P.E.
City Engineer
City of Puyallup
333 S Meridian
Puyallup, WA 98371
253-435-3606

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

mpalmer@ci.puyallup.wa.us

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.

The Clarks Creek Targeted Outfall Retrofit Project will analyze and prioritize stormwater outfalls in the TMDL-affect Clarks Creek basin and retrofit at least six (6) of the highest-ranked outfalls (Attachment A). Prioritization will be based on analysis of the overall water quality benefits, a cost-benefit analysis, and the feasibility of retrofit.

Installation of stormfilter vaults will provide stormwater quality improvements in the TMDL-affected Clarks Creek basin. Use of stormfilters is expected to provide sediment, nutrient, and organic material filtration. Reduction in loading of these urban runoff pollutants will provide several water quality improvement benefits to the system, including a reduction in sediment oxygen demand (SOD), elodea nuisance growth, and reduced DO levels in the stormwater runoff. Reduction in nutrient loading to the creek will allow for a higher DO-carrying capacity of the waters.

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 generated from the project area contains pollutants identified in the DO TMDL including sediment, TSS, pH, and other organic material and nutrient loadings. These pollutant-generating sources from the residential land use areas they are located in present a negative impact to the creek and water quality.

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 Clarks Creek basin is approximately 6.6 acres in size, with 55% contained within the City of Puyallup limits. Of the 3.6 acres of the basin, the City will soon be obligated under the Clarks Creek DO TMDL (expected publish date: January 2012) for implementation activities including wasteload allocations for the City to reduce the volume of untreated stormwater into Meeker Creek – a tributary of Clarks Creek – by 50%. This project will retrofit at least six of the 35 total outfalls in the basin. It is anticipated for the selected outfalls to be those that would provide the largest stormwater volume treatment and effective water quality improvement benefit – targeting 20% of the drainage area, meeting 40% of the implementation plan WLA for the City.

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.

This project includes the retrofit of at least six of the 35 Clarks and Meeker creek stormwater outfalls. The level of water quality treatment provided by this structural BMP retrofit is in-line with new and redevelopment standards.

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

The proposed approach to treat stormwater at the outfall locations is being implemented along side other efforts in the water shed to address the TMDL-required implementation activities that will required a reduction of untreated stormwater flows to the Clarks Creek basin. This requirement is most appropriately

Part 2

FY 2012 Stormwater Retrofit and LID Grant Program

addressed through a variety of methods. This project provides for water quality treatment of runoff from existing impervious and pollutant-loading surfaces. Additional implementation activities, separate from this project, include other methods of management which will, collectively, provide for a well-rounded approach to addressing the water quality problem present.

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

An estimate of the proposed project is included with this application as Attachment C.

8. 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.

This project proposes to filter stormwater at select outfall locations to Clarks and Meeker creeks. No infiltration would be included in the deployment of this project.

9. 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

THIS CONCLUDES PART 2