MEETING AGENDA

KELSO STORMWATER ADVISORY COMMITTEE

DATE: October 29, 2014
TIME: 4:00 pm – 5:00 pm
LOCATION: Kelso City Hall, Suite 203

Old Business

1) Stormwater Management Program Plan and draft gap analysis

Kelso Stormwater Advisory Committee Meeting
October 29, 2014 @ 4:00 p.m.
City Hall Conference Room 203
203 S. Pacific Ave.

Attendees:

1. Dan Howell
2. Steffanie Taylor
3. Gloria Nichols
4. [illegible]
5. Van McKay
6. [illegible]
7.
8.
9.
10.
11. Erik Olson - Excused Absence
12.
13.
14.
15.

Engineering Department

203 S. Pacific Avenue, PO Box 819 Kelso, WA 98626

Stormwater Advisory Committee Meeting

April 30, 2014

Call to Order:

Stephanie called the meeting to order at 4:10 p.m., at City of Kelso City Hall, 203 S. Pacific Ave., Conference Room 203

Those present were as follows:

Advisory Committee Members:
Gloria Nichols
Gary Fredricks
Tim Wines
Alexandria Barg
Steffanie Taylor
Erik Olson

Staff:
Van McKay, City of Kelso
Nina Caulfield, Recording Secretary

Excused Absences:

Unexcused Absences:
Dan Howell

Approval of Minutes:

Gary made the motion, seconded by Tim to approve the minutes of January 29, 2014. Motion carried, all in favor.

New Business:

1. **Stormwater Management Plan Draft Scope of Work**

The City's current Stormwater Management Program is over 6 years old. The new permit requires an updated plan. Some of the items that it should include are: public involvement, education, advertising, code changes, process changes, etc. It will also address budget constraints with options and suggestions on how to comply without overextending funds.

This is a two part process. Part one is a general overview of the plan, and is the Program. Part two is very specific with dates, spreadsheets, action items, and a compliance schedule.

As a side note, the Permit Appeal has been decided. Little change was made. A positive change is that they will not be requiring pervious pavement on major streets.

The responsibilities for these changes are being spread out to the appropriate departments due to the complexity of all of the requirements. For example, Operations will clean the catch basins and Community Development will rewrite the code. There will be review teams for the code changes, and should include KSAC.

It was recommended and all agreed to have OTAK draft the Stormwater Management Plan.

Next Meeting:

Committee discussed and agreed the next meeting shall be held July 23, 2014.

Gary made a motion to adjourn the meeting, Erik seconded, with all in favor the meeting adjourned at 5:05 pm.

Approved:

Steffanie Taylor, Chairperson

Nina Caulfield, Recording Secretary

Memorandum

700 Washington Street
Suite 401
Vancouver, WA 98660
Phone (360) 737-9613
Fax (360) 737-9651

To:	Van McKay
From:	Trista Kobluskie
Prepared By:	Trista Kobluskie
Copies:	
Date:	October 22, 2014
Subject:	Draft NPDES Permit Gap Analysis for Kelso Stormwater Advisory Committee Review
Project No.:	17258

Attached is the Working Draft (version 2) of the City of Kelso 2013-2018 Phase II NPDES Municipal Stormwater Permit Gap Analysis, dated 10/22/2014.

The analysis is in process, and this draft is not complete. The description of the current program is complete. The description of the new program and its associated staffing levels is under development and is not complete.

The draft is presented for review by the Kelso Stormwater Advisory Committee.

Reading the Analysis

The analysis describes Kelso's current efforts to manage stormwater in accordance with the 2007-2012 NPDES Western Washington Phase II Municipal Stormwater Permit (previous permit). It then compares those efforts with permit requirements in the 2013-2018 NPDES Western Washington Phase II Municipal Stormwater Permit (new permit) to reveal potential gaps in compliance with the new permit. The analysis then estimates the staff hours necessary to meet the new permit's requirements.

The analysis uses a variety of acronyms, including the following:

BMP = Best Management Practice
FTE = full time equivalent
LOE = level of effort
MS4 = municipal separate storm sewer system
NPDES = National Pollutant Discharge Elimination System
SWMMWW = Stormwater Management Manual for Western Washington (Ecology, 2012)
SWMP = Kelso's Stormwater Management Program

The following describes each section of the spreadsheet, from left to right.

NPDES Requirements

NPDES Requirements include permit section numbers, summarized requirements, and due dates from the new permit. In most cases, the new permit language is similar to language that was used in the previous permit, so permit requirements from the previous term are not included.

Current Program Description

The current program describes Kelso's efforts to meet the previous permit from 2007 through 2012. The description includes the average annual level of effort (LOE) expressed as hours of staff time, averaged over five years from 2007 to 2012. The analysis assumes that the level of effort described in the current program continued in 2013.

2014-2018 Program (New Program)

This section of the analysis is under development and is not complete. The new program describes gaps that exist between Kelso's current program and the requirements of the new permit. It estimates LOE, expressed as annual hours of staff time, for each year from 2014 through 2018. The estimated LOE in 2018 includes the entire calendar year, although the permit expires in August 2018.

Assumptions

The Assumptions section lists unique assumptions used in estimating LOE for both the current and the new programs.

Method

Otak reviewed program documentation and reports and interviewed staff to describe the current program and associated LOE. The gap between the current and new programs will be analyzed by referencing the new permit and guidance documents published by Washington Department of Ecology. Level of effort will be estimated using information obtained about LOE for the current program and professional judgment.

For both the current program and the new program, Otak used 1,872 hours as the basis for calculating Full Time Equivalent (FTE), to account for non-working time such as holidays.

Preliminary Conclusions

Designated stormwater staff work on other non-NPDES tasks in the conduct of City business, therefore the analysis of the current program does not account for the full three FTEs that are budgeted in the City's drainage fund (Fund 407).

The new program will require continuation of most existing NPDES-related activities and may require an increase in effort and investment in the areas of outreach and education, illicit discharge detection and elimination, and controlling runoff from development and redevelopment sites. More information will be available when the gap analysis is complete.

City of Kelso

2013-2018 Phase II NPDES Municipal Stormwater Permit - Gap Analysis

Working Draft Version 2 - 10/22/2014

NPDES Requirements			Current Program Description				2014-2018 Program (New Program) - Analysis Under Development							Assumptions
Permit Section	Requirements Summarized	Implementation Due Date	Current Program Description		Responsi-bility	Level of Effort (Hours, Average Annual)	"Gap" Between Existing Program and Required Activities in 2013-2018 Permit	2014 LOE	2015 LOE	2016 LOE	2017 LOE	2018 LOE	Total LOE	Assumptions
Permit Element #S5.C.1, Public Education and Outreach														
The SWMP shall include an education and outreach program designed to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts and encourage the public to participate in stewardship activities. The education program may be developed and implemented locally or regionally.														
S5.C.1.a **Educate Target Audiences**	Build general awareness of the stormwater problem among the general public, businesses, engineers, contractors, developers, and land use planners.	**Ongoing**	Solution to Pollution brochure on web site; IDDE education to residents & businesses (educational enforcement).	Stormwater Management Program Web site Meeting with staff	NPDES Coordinator	60	None	90	90	90	90	90	450	
	Effect changes in specific behavior in a specific target audience.	**2/2/2016; See S5.C.1.c**	A similar effort was conducted in the previous permit term. The targeted behavior was use of fertilizers, pesticides, dripping oil, dog waste, and car washing - characterized as a suite of residential home maintenance practices. The City created a brochure and advertising to educate audiences about these practices.	Stormwater Management Program Meeting with staff	NPDES Coordinator	30	A new education campaign is required. Suggested steps include: 1. select audience 2. select BMP 3. develop an outreach plan and a plan for measuring behavior change 4. develop outreach materials 5. implement the outreach and measurement strategy	0	120	0	0	0	120	New Program Assumes a consultant is hired for measuring behavior change, and assumes measurement is completed in 2015.
S5.C.1.b **Create Stewardship Opportunities**	Create stewardship opportunities to encourage residents to participate in activities such as stream teams, storm drain marking, volunteer monitoring, riparian plantings, and education activities.	**Ongoing**	The City had a volunteer storm drain stenciling program through a church group. The program is currently inactive.	Meeting with staff	NPDES Coordinator	12	Identify a stewardship opportunity, reach out to an organization, and coordinate the opportunity.	0	20	20	20	20	80	
S5.C.1.c **Measure Adoption of Behaviors**	Measure the understanding and adoption of targeted behavior(s), (see S5.C.1.a, above) and direct changes to outreach and education resources based on results.	**2/2/2016 - Direct changes to outreach program**	In the previous term, the City, in coordination with other local permittees, hired a consultant to do a pre- and post-survey following a stormwater brochure blitz to the general population. The campaign showed an impact. The cost was $50,000. Clean Water Partners started and then stopped a regional education program.	Stormwater Management Program Meeting with staff	NPDES Coordinator	30	Complete one remaining step from the process described in S5.C.1.a.ii, above: 6. Document how education and outreach resources will be directed most effectively as a result of the measurement	0	0	40	0	0	40	New Program LOE for performing the outreach and measurement is estimated above. Assumes 40 hours for NPDES Coordinator to direct changes to the education program and document the changes in a report.
					Hours	**132**		**90**	**230**	**150**	**110**	**110**	**690**	
					FTE	**0.07**		**0.05**	**0.12**	**0.08**	**0.06**	**0.06**		
Permit Element #S5.C.2, Public Involvement and Participation														
Permittees shall provide ongoing opportunities for public involvement and participation through advisory councils, public hearings, watershed committees, participation in developing rate-structures or other similar activities. Each Permittee shall comply with applicable state and local public notice requirements when developing elements of the SWMP.														
S5.C.2.a **Input to SWMP**	Create opportunities for the public to participate in the decision making processes involved in the development, implementation and update of the Stormwater Management Program (SWMP).	**Ongoing**	The City holds quarterly meetings of Kelso Stormwater Advisory Committee (KSAC).	Stormwater Management Program Meeting with staff	NPDES Coordinator; Community Development Engineering	48	None	40	40	40	40	20	180	The KSAC meetings last about one hour and require four to eight hours preparation by the NPDES Coordinator and three hours of time for an administrative assistant. Meeting frequency may increase during code and manual update (see S5.C.4.a); the additional LOE is documented with that permit requirement.
S5.C.2.b **Availability of Stormwater Program Documents**	Post the SWMP, the Annual Report, and all other required permit submittals on the Permittee's website and make documents available to the public upon request.	**5/31 Each Year; Ongoing**	The City posts required documents to its web site.	Stormwater Management Program Meeting with staff	NPDES Coordinator	8	None	8	8	8	8	8	40	
					Hours	**56**		**48**	**48**	**48**	**48**	**28**	**220**	
					FTE	**0.03**		**0.03**	**0.03**	**0.03**	**0.03**	**0.01**		

City of Kelso

2013-2018 Phase II NPDES Municipal Stormwater Permit - Gap Analysis

Working Draft Version 2 - 10/22/2014

NPDES Requirements			Current Program Description				2014-2018 Program (New Program) - Analysis Under Development							Assumptions
Permit Section	Requirements Summarized	Implementation Due Date	Current Program Description		Responsi-bility	Level of Effort (Hours, Average Annual)	"Gap" Between Existing Program and Required Activities in 2013-2018 Permit	2014 LOE	2015 LOE	2016 LOE	2017 LOE	2018 LOE	Total LOE	Assumptions
Permit Element #S5.C.3, Illicit Discharge Detection and Elimination														
The SWMP shall include an ongoing program designed to prevent, detect, characterize, trace and eliminate illicit connections and illicit discharges into the MS4.														
S5.C.3.a	**Storm Sewer System Map**	Ongoing mapping of the MS4, including outfalls, receiving waters, City-owned stormwater treatment and flow control facilities, and tributary conveyances to outfalls that are 24-inch or larger.	**Ongoing**	In the previous permit term, the City hired a consultant to write the Stormwater Master Plan and to create a geodatabase of stormwater infrastructure. The consultant field-verified GPS coordinates, pipes, invert elevations, and bottom elevations for facilities identified from as-builts by the NPDES Coordinator.	Stormwater Management Program Meeting with staff	NPDES Coordinator Community Development Engineering	440	The mapping effort will continue with the following tasks: - 100-150 catch basins and manholes are not documented in the geodatabase. The City needs to field-verify GPS coordinates, pipes, invert elevations, and bottom elevations for these catch basins and manholes and then digitize them. - The NPDES Coordinator has identified a need for error correction in the geodatabase. - Any new City facilities will need to be mapped on an ongoing basis. - The City could consider implementing a task to begin mapping new private storm sewer infrastructure that triggers review under the 2012 Stormwater Management Manual for Western Washington and that will require future inspection for compliance with maintenance standards (see S5.C.4.c). This could contribute to accurate tracking of regulated facilities and compliance with NPDES inspection requirements. Note: catch basin mapping is not specifically required by the permit; however an accurate inventory of catch basins is required to comply with S5.C.5.d (O&M - catch basin inspection), and it could be very helpful for IDDE field screening (S5.C.3.c).	0	73	73	73	73	292	Current Program 1,353 catch basins and 652 manholes are documented in the geodatabase (2005 structures). LOE includes time for purchasing and contract management by the NPDES Coordinator (20 hours), gathering as-builts (20 hours), and field technicians to survey catch basins and manholes (2 technicians x 0.5 hours x 2005 structures = 2005 hours). New Program Assumes no work done in 2014. Assumes field reconnaissance to address the backlog of 100-150 catch basins/manholes is 30 minutes per structure using two Community Development Engineering Inspectors (125 hours). Subsequent digitization by the NPDES Coordinator or a GIS Tech is estimated at 15 minutes per structure (31 hours). Assumes LOE for error correction of the geodatabase is 120 hours over permit term. Assumes LOE for mapping new City facilities averages four hours per year. Does not estimate LOE for the optional task of mapping new private storm infrastructure.
S5.C.3.b	**Illicit Discharge Ordinance**	Implement an ordinance to prohibit non-stormwater, illicit discharges and connections to the MS4. Update the allowable, conditionally allowable, and prohibited discharges according to new permit requirements.	**Ongoing - current program; 2/2/2018 - Update ordinance**	Ordinance 09-3713 was adopted in 2009. The process is described in S5.C.4.a, below.	Stormwater Management Program KMC 13.11 Illicit Discharge	NPDES Coordinator	138	Update KMC 13.11 to include minor new prohibitions and clarifications.	0	0	0	60	8	68	Current Program Staff estimates that LOE equated to 4 months of full-time work (640 hours) plus an additional seven KSAC meetings (49 hours). The LOE is then divided between this permit requirement and permit requirement S5.C.4.a., Stormwater Runoff Control Ordinance, below, since the work to complete both ordinances was combined during the previous permit term. New Program Assumes minor effort to update the municipal code and assumes that public involvement will include discussion at one KSAC meeting and one Public Hearing.
S5.C.3.c	**Detection and Elimination Program**	Implement an ongoing program designed to detect and identify non-stormwater discharges and illicit connections into the MS4, including investigation through a field screening methodology, training field staff, operating a hotline for public reporting, and informing the public, businesses, and the general public of hazards associated with illicit discharges.	**12/31/2017 - field screen 40% of MS4 and, on average, 12% each year thereafter; Ongoing - Hotline, field staff training, inform public**	The documented program includes elements of detection through outfall screening, field staff detection, and public reports; characterization; response through spill control, reporting, and investigation (tracing); and removal through cleanup and enforcement.	Municipal Stormwater Illicit Discharge Detection and Elimination (IDDE) Program 2011 KMC 13.09 - Stormwater KMC 13.11 - Illicit Discharge Stormwater Utility Ordinance 09-3713	Public Works; NPDES Coordinator	272	Details of an update to this program are under consideration. Select a method or methods to complete field screening of 40% of the MS4 by 12/31/2017. Several options to find, characterize and trace illicit connections and illicit discharges are described in Herrera 2011. Depending on method(s) selected, update IDDE program documentation and Standard Operating Procedures for field screening to reflect new program in 2015.	TBD	TBD	TBD	TBD	TBD	0	Current Program Current LOE includes 192 hours/year documented in the Municipal Stormwater Illicit Discharge Detection and Elimination (IDDE) Program 2011 (page 4) and an additional estimated 80 hours/year for investigation of reported spills and potential discharges. It includes all aspects of compliance with permit components S5.C.3.c (this requirements) and S5.C.3.d (below), including detection, response, enforcement and elimination. New Program LOE is to be determined.
S5.C.3.d	**Address Illicit Discharges**	Addresses illicit discharges and illicit connections by characterizing discharges, tracing illicit discharges and illicit connections, and eliminating discharges and connections.	**Ongoing**	See above	See above	See above	See above	Continue current program (see above) to respond to reports of spills or other illicit discharges until 2015. In 2015, prior to field screening (required in S5.C.3.i), create new Standard Operating Procedures in the Kelso IDDE manual for required indicator sampling of pH, turbidity, ammonia, temperature, flow, color, odor, and visual indicators. Implement indicator sampling in response to reported potential illicit connections or discharges discovered during field screening.	272	432	352	352	352	1760	Current Program The current level of effort is discussed in S5.C.3.c, above. New Program LOE for new permit term is estimated from the baseline from the previous permit term, above (272 hours). Beginning in 2015, LOE increases in expectation that more illicit connections and discharges will be discovered through more rigorous field screening and that more rigorous response (indicator sampling) will be implemented in response to findings. Assumes a one-time increase of 80 hours in 2015 to account for initial implementation of indicator sampling (preparation of Standard Operating Procedures, acquisition of new equipment and supplies, and learning curve for new procedures and equipment).
S5.C.3.e	**Staff Training**	Train staff who are responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges, including spills, and illicit connections, to conduct these activities.	**Ongoing**	NPDES Coordinator provides training to Public Works field staff and Police. Training is 1 hour. Conducted 1 time per permit term and as new staff are hired. This training does not include specialized training for field crews that conduct field screening; training for field screening is included in S5.C.3.c, above.	See above	NPDES Coordinator; Community Development; Public Works; Police	12	Train all staff in a 1-hour training in 2015. Provide training to any new staff. By July 2018, update training materials with new prohibitions per S5.C.3.b.	0	48	0	0	0	48	Training attended by approximately 40 Public Works and Police staff and is a one-hour training. Includes eight hours of prep time for NPDES Coordinator. Held once per permit term and as needed for new staff.
S5.C.3.f	**Recordkeeping**	Track and maintain records of the activities conducted to meet the requirements of this section.	**Ongoing**	The City tracks responses to reported spills in a spreadsheet. It may not include all types of illicit discharges that the city responds to.	Kelso IDDE Log.xls	NPDES Coordinator	40	More thorough tracking is needed. See Herrera 2011, page 13, for data reporting suggestions.	40	40	40	40	40	200	
						Hours	**902**		**312**	**593**	**465**	**525**	**473**	**2368**	
						FTE	**0.48**		**0.17**	**0.32**	**0.25**	**0.28**	**0.25**		

City of Kelso

2013-2018 Phase II NPDES Municipal Stormwater Permit - Gap Analysis

Working Draft Version 2 - 10/22/2014

NPDES Requirements			Current Program Description				2014-2018 Program (New Program) - Analysis Under Development							Assumptions
Permit Section	Requirements Summarized	Implementation Due Date	Current Program Description		Responsi-bility	Level of Effort (Hours, Average Annual)	"Gap" Between Existing Program and Required Activities in 2013-2018 Permit	2014 LOE	2015 LOE	2016 LOE	2017 LOE	2018 LOE	Total LOE	Assumptions
Permit Element #S5.C.4, Controlling Runoff from New Development, Redevelopment, and Construction Sites														
Each Permittee shall implement and enforce a program to reduce pollutants in stormwater runoff to a regulated small MS4 from new development, redevelopment and construction site activities. The program shall apply to private and public development, including roads.														
S5.C.4.a **Stormwater Runoff Control Ordinance**	Continue to enforce the current stormwater runoff control ordinance. Update the ordinance and other associated enforceable documents to new standards, including Minimum Requirements, thresholds, and definitions in Appendix 1 of the 2012 Stormwater Management Manual for Western Washington (SWMMWW). Include requirements, limitation, and criteria for site planning, BMP selection, BMP design, BMP infeasibility criteria, LID competing needs criteria, and BMP limitations.	**Ongoing 6/30/2017 for new requirements**	Ordinance 10-3727 was adopted in 2010. The project included planning for, writing, and adopting the ordinance. Some work was done by a consultant. The total effort spanned 18 months (June 2008 to late 2009). It included contract management for the consultant, increased number of KSAC meetings (monthly rather than quarterly meetings), presentations to Council, and writing drafts of the ordinance.	KMC 13.09 Stormwater Management	Community Development Engineering; NPDES Coordinator	138	Update KMC 13.09 and the KEDM to new standards by 6/30/2017.	40	160	320	320	0	840	<u>Current Program</u> Staff estimates that LOE equated to 4 months of full-time work (640 hours) plus an additional seven KSAC meetings (49 hours). The LOE is then divided between this permit requirement and permit requirement S5.C.3.B., Illicit Discharge Ordinance, above, since the work to complete both ordinances was combined during the previous permit term. <u>New Program</u> Assumes that responsibility for the update will fall primarily to the NPDES Coordinator, but will also include Community Development Planning, Public Works, City Manager, and Cowlitz Fire & Rescue. The estimated LOE includes the update of Kelso's enforceable documents relating to this, and several other permit sections as follows: - S5.C.4.a - Stormwater Runoff Control Ordinance (this requirement) - S5.C.4.c - Long Term Operation and Maintenance (below) - S5.C.4.f - Low Impact Development requirements (below) - S5.C.5.a - Establish Maintenance Standards (below) Assumes that effort for this requirement stops after codes and the KEDM are adopted and effective.
S5.C.4.b **Site Plan Review and Permitting**	Conduct site plan review, inspection, and enforcement of applications for public and private projects meeting the thresholds adopted pursuant to S5.C.4.a, above. Include the following components in the review and inspection program: site plan review, pre-construction inspection of sites with high potential for erosion, inspection of all development sites during construction to confirm proper installation and maintenance of erosion and sediment controls, post-construction inspection of permanent stormwater facilities, and an enforcement strategy for issues of non-compliance.	**Ongoing; 7/1/2017 review more projects**	The NPDES Coordinator participates in Pre Application Conferences, reviews site plans, and reviews grading permit applications. Two Engineering Technicians perform site inspections before, during, and after construction on applicable sites.	KMC 13.09 Stormwater Management KEDM Chapters 2 and 4 Meeting with staff	NPDES Coordinator; Community Development Engineering	240	Continue current reviews and inspections until new standards are adopted in 2017. After 7/1/2017, more development and redevelopment sites will require stormwater site plan review. Some building permits will also trigger stormwater review. Many site plans may be more complex, requiring more stringent and lengthy reviews and construction inspections.	240	240	240	336	432	1488	<u>Current Program</u> LOE includes review of pre-applications, site plans, and grading applications that include stormwater requirements. Includes pre-construction, construction, and post-construction inspections where required. Assumes an average of three pre-application conferences, four grading permits, two site plans triggering Local stormwater requirements, and one site plan triggering State stormwater requirements per year. Includes time for permit intake and data entry. <u>New Program</u> Assumes the overall average annual number of applications for pre-application conferences, grading, site plans, and building permits does not change from recent years and remains constant over the permit term. After new standards are adopted 7/1/2017, assumes a greater number of applications (12), including some residential building permits, will trigger stormwater review under the 2012 SWMMWW. Assumes that permit intake, data entry, review, and inspection time for an application triggering the 2012 SWMMWW requirements averages 36 hours. Assumes that all staff time for review and inspection will take place in the same year as the application. Assumes no review for Local requirements or grading outside those applications that trigger review under the 2012 SWMMWW.
S5.C.4.c **Long Term Operation and Maintenance**	Enact provisions to ensure adequate long-term operation and maintenance of facilities permitted and constructed pursuant to the requirements in S5.C.4.a and b, above. Include a requirement to identify the responsible party, provide authority for inspection, establish maintenance standards, inspect facilities, and enforce compliance with standards.	**6/30/2017**	Kelso has no current program because no treatment and flow control facilities in Kelso have been designed under the 2005 SWMMWW. All facilities were designed under Local requirements for projects less than one acre in size. Note: this permit requirement describes only *private* stormwater facilities, not public facilities.	Meeting with staff	N/A	0	Establish maintenance standards for treatment, flow control, and on-site stormwater management facilities; update KMC 13.09 to require responsible party to be identified; begin an inspection program for regulated facilities; and establish enforcement procedures. Begin annual inspections of private treatment and flow control facilities that discharge to the MS4 and were designed using the SWMMWW or equivalent. Begin inspections of permanent treatment and flow control facilities and catch basins in new residential development every six months during the construction period. Begin a program to enforce maintenance standards when inspection identifies exceedance within permit-established timelines. Keep records of inspections and enforcement actions.	8	8	8	88	128	240	<u>New Program</u> LOE for establishing the maintenance standards, updating municipal code, and updating KEDM is included with S5.C.4.a, above. Assumes annual inspections of private treatment and flow control facilities will be minimal for the following reasons: only two existing facilities qualify for inspection under these requirements (inspections begin in 2014) and new facilities permitted under the 2012 SWMMWW, effective 7/1/2017, will go to construction in summer 2018. Assumes that planning work to develop inspection procedures, forms, enforcement, follow-up, and record-keeping will take place during 2017 and 2018. Assumes record-keeping will begin in 2014.
S5.C.4.d **Provide NOI Forms**	Make available as applicable copies of the "Notice of Intent for Construction Activity" and copies of the "Notice of Intent for Industrial Activity" to representatives of proposed new development and redevelopment.	**Ongoing**	Provide NOI forms.	None	Community Development	8	None	4	4	4	4	4	20	
S5.C.4.e **Staff Training**	Ensure that all staff whose primary job duties are implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including permitting, plan review, construction site inspections, and enforcement, are trained to conduct these activities.	**Ongoing; Implied deadline: 6/30/2017 - for new training**	Staff responsible for inspecting stormwater systems and issues have been trained and are Certified Erosion and Sedimentation Control Leads (CESCL).	Stormwater Management Program	Community Development Engineering	25	Update inspectors' CESCL certifications every three years. Provide training for permit intake staff on new terminology, thresholds, and requirements for stormwater controls. Obtain technical training for NPDES Coordinator and other staff responsible for review and inspection of site plans that will include permanent treatment and flow control stormwater facilities and on-site stormwater management facilities. Ensure training is complete by 6/30/2017.	46	46	6	22	6	126	<u>Current Program</u> CESCL recertification requires eight hours of training every three years. Two employees maintain CESCL certification. For the current program, CESCL training LOE was 32 hours over the permit term. Includes also 100 hours of training and research for NPDES Coordinator over the permit term. <u>New Program</u> Assumes maintenance of the CESCL recertification LOE for two staff (6 hours/year). Assumes one four-hour training conducted by the NPDES Coordinator for two Community Development permit intake staff by 6/30/2017, including eight hours of preparation by NPDES Coordinator. Assumes 80 hours of preparation and training for the NPDES Coordinator on LID techniques in 2014 and 2015. For example, the WSU Extension LID Technical Training is 68 hours of course time, plus five tests.
S5.C.4.f **Low Impact Development Requirements**	Incorporate requirements to use Low Impact Development principles in development and redevelopment projects following guidance in *Integrating LID into Local Codes: a Guidebook for Local Governments* (Puget Sound Partnership, 2012). Summarize the results of the revision process.	**6/30/2017 - Code and manual update 3/31/2018 - Submit summary**	The 2007-2012 permit required the City to evaluate potential barriers to Low Impact Development in its local codes (Permit condition S9.E.4.a). Kelso partnered with City of Longview on this task that was completed in 2011.	Low Impact Development (LID) in the Longview-Kelso Area Meeting with staff	N/A	24	Update KEDM and KMC 13.09 to incorporate and require LID principles and LID BMPs. Write a summary report to submit with the 2017 Annual Report in 2018.	0	0	0	0	40	40	<u>Current Program</u> Assumes that City of Longview staff performed the majority of the work for the LID Barriers Analysis. <u>New Program</u> LOE for planning, analysis, and code update is included in S5.C.4.a, above. Assumes 40 hours for the NPDES Permit Coordinator to summarize the process in an Annual Report to Ecology.
S5.C.4.g **Watershed-scale Stormwater Planning**	Participate in watershed-scale stormwater planning within a watershed selected by a Phase I county.	**N/A**	N/A	N/A	N/A	0	N/A	0	0	0	0	0	0	This permit requirement does not apply to Kelso.
					Hours	**435**		**338**	**458**	**578**	**770**	**610**	**2754**	
					FTE	**0.23**		**0.18**	**0.24**	**0.31**	**0.41**	**0.33**		

City of Kelso

2013-2018 Phase II NPDES Municipal Stormwater Permit - Gap Analysis

Working Draft Version 2 - 10/22/2014

NPDES Requirements			Current Program Description				2014-2018 Program (New Program) - Analysis Under Development							Assumptions
Permit Section	Requirements Summarized	Implementation Due Date	Current Program Description		Responsi-bility	Level of Effort (Hours, Average Annual)	"Gap" Between Existing Program and Required Activities in 2013-2018 Permit	2014 LOE	2015 LOE	2016 LOE	2017 LOE	2018 LOE	Total LOE	Assumptions
Permit Element #S5.C.5, Municipal Operations and Maintenance														
Each Permittee shall implement an operations and maintenance (O&M) program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.														
S5.C.5.a **Establish Maintenance Standards**	Establish maintenance standards in accordance with the SWMMWW for the City's stormwater treatment and flow control facilities. Follow guidelines for completing maintenance within timeframes specified in the permit if inspection finds that a maintenance standard is exceeded.	**Ongoing; 6/30/2017 - for new standards**	Maintenance standards were developed as part of S5.C.4.a in the previous permit term and have been in effect since 2010.	KMC 13.09 Stormwater Management KEDM Chapter 4 Municipal Stormwater Operations and Maintenance (O&M) Program 2011	NPDES Coordinator; Public Works Operations	0	Update KMC 13.09, KEDM, and O&M Program with new maintenance standards for public facilities.	0	0	0	0	0	0	<u>Current Program</u> LOE estimated as part of S5.C.4.a, above. <u>New Program</u> LOE for updating municipal code, KEDM, and the O&M Program is included in S5.C.4.a, above.
S5.C.5.b **Annual Inspections of Water Quality and Flow Control Facilities**	Annually inspect all City-operated stormwater treatment and flow control facilities.	**Ongoing**	Annual inspection of five City-owned treatment and flow control facilities.	Municipal Stormwater Operations and Maintenance (O&M) Program 2011 Meeting with staff	NPDES Coordinator	24	Continue annual inspections. Ensure new maintenance standards are used for inspection after 6/30/2017.	24	24	24	24	24	120	<u>Current Program</u> Assumes inspections are performed by the NPDES Coordinator. <u>New Program</u> Assumes the number of City-owned facilities will remain constant through the permit term.
	Resultant cleaning and maintenance, as indicated from inspections performed in compliance with S5.C.5.b, above.	**Ongoing**	Cleaning, as needed of City-owned treatment and flow control facilities. To date, inspections have led to annual cleaning of two facilities by Public Works crews.	Municipal Stormwater Operations and Maintenance (O&M) Program 2011 Annual Drainage Maintenance spreadsheet Stormwater Facility Maintenance Log Meeting with staff	Public Works	32	Continue cleaning facilities as inspections indicate within permit timelines. If cleaning or maintenance of City-owned oil/water separators is indicated by inspection, then the City will need to hire a contractor to perform the work.	24	27	24	24	24	123	<u>New Program</u> Assumes the number of City-owned facilities will remain constant through the permit term. Assumes that two facilities receiving prior annual maintenance will continue to receive annual maintenance. Assumes three oil/water separators that did not receive maintenance during the previous permit term will require cleaning one time each during the permit term (in 2015). Assumes oil/water separator cleaning will be contracted and will require coordination by the NPDES Coordinator.
S5.C.5.c **Spot Checks after Storm Events**	Spot checks of potentially damaged permanent stormwater treatment and flow control BMPs/facilities after major storm events. If spot checks indicate widespread damage/maintenance needs, inspect all stormwater treatment and flow control BMPs/facilities that may be affected. Conduct repairs or take appropriate maintenance action.	**Ongoing**	NPDES Coordinator conducts spot checks for damage to treatment and flow control facilities after larger storms. Public Works crews check areas of the conveyance system known to flood during winter storms.	Municipal Stormwater Operations and Maintenance (O&M) Program 2011 Meeting with staff	NPDES Coordinator; Public Works	208	None	208	208	208	208	208	1040	<u>Current Program</u> Assumes 8 hours annually for the NPDES Permit Coordinator to spot check treatment and flow control facilities. Assumes 200 hours annually for Public Works crews to spot check drainage hot spots throughout the rainy season.
S5.C.5.d **Catch Basin Inspection**	Inspect all catch basins and inlets owned or operated by the City at least once no later than August 1, 2017 and every two years thereafter. Clean catch basins if the inspection indicates cleaning is needed to comply with maintenance standards established in the SWMMWW.	**August 1, 2017 then Every Two Years**	20% of catch basins are inspected each year on a rotating basis. The current practices is as follows: 1) NPDES Coordinator produces a list of inspection sites 2) Public Works field crews inspect the sites and return data to Community Development 3) NPDES Coordinator analyzes inspection reports to identify cleaning needs 4) Public Works cleans basins identified	Meeting with staff	NPDES Coordinator; Public Works	560	At current rate of 20% per year, only 60% of catch basins will have been inspected by the August 1, 2017 deadline (inspections occurring during 2014, 2015, 2016). A plan for meeting the new permit requirements has not yet been formulated. Options include the following. Continue inspection rate at 20% in 2014, then increase to 26% each year in 2015, 2016, and 2017 (ensuring that inspections are complete by August 1, 2017), then 50% each year beginning in 2018. - or - Develop a plan to inspect catch basins on a circuit basis following guidelines in Department of Ecology Publication No. 13-10-019 *Catch Basin Inspection Alternatives for Phase I and Phase II Municipal Stormwater Permittees* . -or- Use existing inspection and cleaning records to justify a reduced frequency of inspection/cleaning 1x every 5 years (20% of the MS4 per year). This would require a 10-year record of inspections and cleaning or "written statements based on actual inspection and maintenance experiences and certified in accordance with G19.	560	680	680	680	1300	3900	<u>Current Program</u> LOE includes 80 hours / year for NPDES Coordinator and assumes that field inspection and cleaning requires a two-person crew full time for six weeks per year (480 hours) to inspect 20% of catch basins and clean basins as needed. <u>New Program</u> Assumes the option to increase rate of inspection to 26% per year beginning in 2015 is chosen. Assumes only minor system development over the permit term. LOE remains constant for 2014 and increases 160 hours above baseline each year in 2015-2017 to accommodate increased rate of inspection and cleaning (26%/year). Assumes that Kelso will begin inspecting 50% per year beginning in 2018.
S5.C.5.e **Inspection Compliance**	Compliance with the inspection requirements in b, c, and d above shall be determined by the presence of an established inspection program designed to inspect all sites and achieving at least 95% of inspections.	**3/31/2015 - Document established inspection program in Annual Report 6/30/2018 - Achieve 95% of inspections**	Inspection program described above.	Annual Report	NPDES Coordinator	0	The City may need to document the "established inspection program" and ensure that inspection rates reach 95% of those required.	0	0	0	0	0	0	There are no hours specifically devoted to this performance measure. LOE for inspections is estimated above. LOE for recordkeeping is estimated below.
S5.C.5.f **Municipal Maintenance to Reduce Stormwater Impacts**	Implement practices, policies and procedures to reduce stormwater impacts associated with runoff from all lands owned or maintained by the City, and road maintenance activities. Such lands include, but are not limited to, streets, parking lots, roads, highways, buildings, parks, open space, road rights-of-way, maintenance yards, and stormwater treatment and flow control BMPs/facilities.	**Ongoing**	Activities include routine street sweeping, ditch maintenance, and culvert cleaning. Municipal operations for streets, water, sewer, stormwater, and parks follow guidelines in several guidance manuals and programs to maintain City property and right-of-way in a manner that reduces stormwater impacts. Additionally, response to emergent and urgent flooding of streets, using Public Works personnel and other staff as necessary, including street closures, sand bagging, and emergency catch basin, culvert, and manhole clearing, is included.	Municipal Stormwater O&M Program 2011 Nutrient, Integrated Pest Management and Herbicide Plan Municipal Stormwater Illicit Discharge Detection and Elimination (IDDE) Program 2011 Annual Drainage Maintenance spreadsheet Email from staff	Public Works	1380	Minor updates to maintenance practices will be required. Street sweeping will increase in 2015 and beyond.	900	1860	1860	1860	1860	8340	<u>Current Program</u> Assumes 500 hours/year for ditch maintenance and culvert cleaning. Includes 40 hours/month for street sweeping (480 hours/year). Assumes 400 hours/year for emergency and urgent flood response, although LOE depends on weather. 400 hours is assumed to be required in a rainy year. <u>New Program</u> Assumes baseline 500 hours/year for routing ditch maintenance and culvert cleaning. Assumes no effort for street sweeping in 2014 and an average of 80 hours/month (960 hours/year) for street sweeping beginning in 2015. Assumes 400 hours/year for emergency and urgent flood control.
S5.C.5.g **Staff Training**	Implement an ongoing training program for employees whose primary construction, operations or maintenance job functions may impact stormwater quality. The training program shall address the importance of protecting water quality, operation and maintenance standards, inspection procedures, selecting appropriate BMPs, ways to perform their job activities to prevent or minimize impacts to water quality, and procedures for reporting water quality concerns.	**Ongoing**	Public Works staff were trained on housekeeping for the SWPPP one time during the previous permit term, and Operations and Parks staff were trained on landscaping practices one time during the previous permit term.	Meeting with staff	NPDES Coordinator; Public Works Operations	10	Update training materials to include new permit requirements. Provide training to Operations crews and Parks crews one time each during the permit term.	0	0	0	48	0	48	<u>Current Program</u> Assumes that two one-hour trainings were given over the permit term. <u>New Program</u> Assumes one -hour training in 2017 to 20 Public Works Operations and Parks staff, including 24 hours of update and preparation time for the NPDES Coordinator.
S5.C.5.h **SWPPP for Maintenance Yards**	Implement a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities operated by the City. The SWPPP shall include periodic visual observation of discharges from the facility to evaluate the effectiveness of the BMP.	**Ongoing**	A SWPPP is in place for the maintenance yard and is followed by Public Works Operations staff. The NPDES Coordinator inspects the yard quarterly. The SWPPP is reviewed and updated once per permit term, or as necessary.	SWPPP	NPDES Coordinator; Public Works	24	Continue operational source control BMPs at the maintenance yard. Continue quarterly inspections. Update the SWPPP as necessary based on inspection and on any changes in pollution-generating activities at the yard. Update the SWPPP according to new permit requirements.	24	24	24	24	24	120	Includes four two-hour inspections per year by the NPDES Coordinator, follow-up and minor consultation with Public Works staff, and updates to the SWPPP as necessary.
S5.C.5.i **Record Keeping**	Maintain records of inspection and repair activities.	**Ongoing**	Operational activities, Inspections and cleanings are tracked in spreadsheets.	Annual Drainage Maintenance Spreadsheet Stormwater Facility Maintenance Log	Public Works; NPDES Coordinator	40	Improve tracking mechanisms.	24	24	24	24	24	120	
					Hours	**2278**		**1764**	**2847**	**2844**	**2892**	**3464**	**13811**	
					FTE	**1.22**		**0.94**	**1.52**	**1.52**	**1.54**	**1.85**		

City of Kelso
2013-2018 Phase II NPDES Municipal Stormwater Permit - Gap Analysis
Working Draft Version 2 - 10/22/2014

NPDES Requirements			Current Program Description				2014-2018 Program (New Program) - Analysis Under Development							Assumptions
Permit Section	Requirements Summarized	Implementation Due Date	Current Program Description		Responsi-bility	Level of Effort (Hours, Average Annual)	"Gap" Between Existing Program and Required Activities in 2013-2018 Permit	2014 LOE	2015 LOE	2016 LOE	2017 LOE	2018 LOE	Total LOE	Assumptions
Permit Element #S5.A and S5.B, Program Implementation, and Other Administration														
S5.A.1 **SWMP Implementation**	Develop and implement a SWMP that covers the geographic area subject to the permit. Included with items above.	**Ongoing**	Included in all program elements.	SWMP Plan 2014	NPDES Coordinator	0	Described in permit component, above. In 2014, hire and oversee a consultant to plan for 2013-2018 permit implementation.	80	0	0	0	0	80	
S5.A.2 **SWMP Plan**	Prepare written documentation of the SWMP and maintain annual updates.	**5/31/2014 then 3/31, annually**	An initial SWMP was prepared in 2008, and the NPDES Coordinator updates it on an annual basis.	SWMP Plan 2014	NPDES Coordinator	40	A substantial update to SWMP Plan for the 2013-2018 permit term is planned to be completed by a consultant by the end of 2014. The NPDES Coordinator will update it annually.	20	40	40	40	40	180	New Program Assumes a decrease in effort in 2014, for review of a new SWMP written by a consultant, and then a return to the baseline LOE from the current program in future years.
S5.A.3 **Program Tracking**	The SWMP shall include an ongoing program for gathering, tracking, maintaining, and using information to evaluate SWMP development, implementation and permit compliance and to set priorities.	**Ongoing - for cost tracking 3/31/2015 and annually with Annual Report - for inspection/enforcement/education tracking**	Tracking of various permit compliance activities using spreadsheets, timesheets, and permit tracking software.	SWMP Plan 2014	NPDES Coordinator	68	Improved tracking methods and documentation are needed. A consultant will work to improve SWMP tracking.	108	68	68	68	68	380	Current Program LOE represents time devoted to tracking all types of permit measures by the NPDES Coordinator. Tracking done by other personnel and other departments is accounted for in their respective individual permit components, above. New Program Assumes increased effort in 2014 to participate in the design and review of new tracking methods. Assumes a return to previous LOE for remainder of permit term.
S5.A.5 **Coordination Among Permittees**	Coordination among entities covered under municipal stormwater NPDES permits may be necessary to comply with certain conditions of the SWMP. The SWMP should include, when needed, coordination mechanisms among entities covered under a municipal stormwater NPDES permit to encourage coordinated stormwater-related policies, programs and projects within adjoining or shared areas.	**3/31/2015 - for description of intrajurisdictional coordination mechanisms Ongoing - for other components**	The City does some coordination on code development, street maintenance, and education programs with City of Longview, Cowlitz County, and CDID #1. Coordination is faltering, according to staff.	Interlocal Agreement	NPDES Coordinator	54	Document, or develop, if missing, a coordination mechanism to clarify roles and responsibilities for the control of pollutants between physically interconnected MS4s with Longview and Cowlitz County. Develop interdepartmental agreements to eliminate barriers to permit compliance. Describe the coordination mechanism in the 2014 Annual Report due March 31, 2015.	74	74	54	54	54	310	Current Program LOE estimated by Otak. New Program Assumes an increased in LOE in 2014 and 2015 to develop agreements, and a return to baseline in future years.
S5.B **MEP and AKART**	Design the SWMP to reduce discharge of pollutants from the MS4 to the Maximum Extent Practicable (MEP), meet State AKART requirements, and protect water quality.	**Ongoing**	Included in all program elements.	SWMP Plan 2014	NPDES Coordinator	0	None	0	0	0	0	0	0	Included in all program elements - no separate level of effort for this requirement.
G18 **Duty to Reapply**	Reapply for coverage under the next permit.	**2/2/2018**	Reapply once per permit term.	None	NPDES Coordinator	1	Apply by 2/2/2018	0	0	0	0	5	5	
					Hours	**163**		**282**	**182**	**162**	**162**	**167**	**955**	
					FTE	**0.09**		**0.15**	**0.10**	**0.09**	**0.09**	**0.09**		
Permit Element #8, Monitoring and Assessment														
All permittees shall provide, in each annual report, a description of any stormwater monitoring or stormwater-related studies conducting by or on behalf of the permittee during the reporting period, except those conducted as part of the RSMP.														
S8.A **Reporting**	Describe any stormwater monitoring or stormwater-related studies conducting by or on behalf of the permittee during the reporting period, except those conducted as part of the RSMP.	**3/31/2015 and each year thereafter**	N/A	N/A	NPDES Coordinator	0	None	0	0	0	0	0	0	No monitoring that is not required has been or is planned to be conducted on behalf of the City.
S8 **Preparation for Future Monitoring**	The 2007-2012 permit required permittees, in S8.C, to prepare for future long-term monitoring. Kelso was required to identify two outfalls or conveyances where stormwater sampling could be conducted and to identify two questions to evaluate the effectiveness of the SWMP.	**N/A**	In collaboration with City of Longview, the City developed a basic monitoring plan that could be used for stormwater monitoring and SWMP effectiveness monitoring in future permit terms.	Kelso Stormwater Monitoring Plan	NPDES Coordinator	40	Discontinue any activity.	0	0	0	0	0	0	The permit requirement from the 2007-2012 term has been discontinued.
S8.B **Status and Trends**	Either participate in the RSMP or conduct status and trends monitoring in accordance with S8.B.2.	**N/A**	N/A	N/A	N/A	0	None	0	0	0	0	0	0	The City is not required to meet this permit requirement.
S8.C **SWMP Effectiveness Study**	Either participate in the RSMP for effectiveness or conduct effectiveness study in accordance with S8.C.2	**8/15/2014 and each year thereafter - for Option #1 payment into RSMP Various - for Option #2**	N/A	N/A	NPDES Coordinator	0	None	4	4	4	4	4	20	Assumes two hours for NPDES Permit Coordinator to initiate and approve payment and two hours for financial services staff to complete the payment.
S8.D **Source ID and Diagnostic Monitoring**	Participate in the RSMP SIDIR	**Payment due 8/15/2014 and each year thereafter**	RSMP contribution	N/A	NPDES Coordinator	0	None	4	4	4	4	4	20	Assumes two hours for NPDES Permit Coordinator to initiate and approve payment and two hours for financial services staff to complete the payment.
					Hours	**40**		**8**	**8**	**8**	**8**	**8**	**40**	
					FTE	**0.02**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		
Permit Element #S9.A and #S9.B, Reporting														
S9.A & D **Annual Reports**	Submit annual report electronically at http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html	**Annually 3/31 beginning 2015**	Submit Annual Report using Ecology's form. Preparing the report requires drawing information from various tracking mechanisms and reports, obtaining information from other departments, and filing out a prescriptive form.	Previous annual reports	NPDES Coordinator; Public Works	24	Continue annual reporting. The NPDES Coordinator will need to learn the new system of online reporting in 2015.	0	48	40	40	40	168	No annual report was due in 2014. 2015 will require an additional eight hours over baseline to learn the new online reporting tool.
S9.B-C **Maintain Open Public Records**	Maintain records of SWMP and permit activities for five years; make records available to the public upon request.	**Ongoing**	Record-keeping and open public records. Respond to NPDES-related and stormwater-related public records requests.	None located	NPDES Coordinator	20	None	40	40	40	40	40	200	Assumes approximately 10 small public records requests per year for NPDES-related and stormwater-related records.
					Hours	**44**		**40**	**88**	**80**	**80**	**80**	**368**	
					FTE	**0.02**		**0.02**	**0.05**	**0.04**	**0.04**	**0.04**		
					Current Annual Hours	**4050**	**New Program Annual Hours**	**2,882**	**4,454**	**4,335**	**4,595**	**4,940**	**21,206**	
					Current FTE	**2.16**	**New Program FTE**	**1.54**	**2.38**	**2.32**	**2.45**	**2.64**		

SPLASH

Thurston County Water Resources News

February 2014

Rain Gardens: Nature's Stormwater Treatment Plants

Water treatment plants typically clean water used in our homes and businesses. They're usually not so pretty, but they get the job done. Rain gardens are nature's stormwater treatment plants that can beautify your landscape and help reduce pollution and flooding caused by stormwater runoff!

Rain gardens are specially designed gardens that capture and filter polluted runoff from impervious surfaces, such as rooftops, driveways, patios and other areas that do not allow rain water to soak into the ground. Rain gardens can be planted with a variety of plants and sized to fit residential properties. Rain gardens also prevent flooding, beautify your landscape, increase your home value and create habitat for birds and butterflies.

Part of what makes the Pacific Northwest so green and beautiful is the rain. When rain lands on the ground and flows overland, it becomes "stormwater runoff." Stormwater runs off of rooftops, driveways, landscapes and sidewalks carrying pollutants with it. If left untreated, these pollutants could end up in local streams, lakes or Puget Sound. According to the Puget Sound Partnership, seventy-five percent of the pollution in Puget Sound comes from stormwater runoff generated in neighborhoods.

You can learn how to design and install a rain garden at Stream Team's upcoming rain gardens workshop on Thursday, April 24 from 6:00 p.m. to 8:30 p.m. To register for the workshop, go to www.streamteam.info/register . You can also request a Stormwater Stewards site visit to learn more about how and where you could install a rain garden in your home landscape. (See page 2 for details).

Thurston County residents may qualify for a reimbursement of up to $400 for installing a rain garden. For more information or to apply, go to **http://www.co.thurston.wa.us/stormwater/utility/utility-rain-garden.html**

For questions about the Rain Garden Reimbursement Program, contact Ann Marie at 360-754-3355 ext. 6857. Stormwater Stewards are also available to assist you in filling out the reimbursement applications.

Do You Know the Health of Your Watershed?

Thurston County has completed watershed characterizations for four watersheds: Deschutes, Nisqually, Henderson Inlet, and Totten-Eld Inlets. Watershed characterizations are detailed landscape descriptions of the health of a watershed. The characterizations are science-based and incorporate features such as impervious area (including roads, roof tops; and vegetation, such as trees, shrubs and grasses), physical processes and biological processes.

The four watershed characterizations and additional information are available at: **http://www.co.thurston.wa.us/waterresources/chara/chara-home.html**

In this issue:

Free Consultations with Stormwater Stewards

Looking for ideas for dealing with stormwater runoff on your property? Stormwater Stewards can help. Stormwater Stewards is a program offered by Thurston County Water Resources and WSU Extension. The program is modeled after the highly successful Master Gardener program. Highly trained and capable Stormwater Stewards are ready to help you learn how to reduce stormwater runoff from your home and landscape. They can make recommendations on:

- Drainage improvements
- Techniques to infiltrate stormwater
- Water friendly landscape techniques
- Designing and constructing rain gardens
- Healthier plants and lawns
- Permeable pavers... and more.

For more information and to schedule a Stormwater Stewards consultation, contact Erica at **stormwater.stewards@gmail.com** or 360-867-2167.

Are You Interested in Becoming a Stormwater Steward?

Thurston County and WSU Extension are looking for passionate folks to join the Stormwater Stewards team in 2014. Trainees receive in-class training and practice installations in May and June on a variety of green stormwater infrastructure techniques appropriate for residential lots. Then a practicum period follows when the volunteers receive practice experience conducting site assessments and eventually become certified Stormwater Stewards. No prior experience necessary – only a passion for learning and a desire to help make on-the-ground change happen.

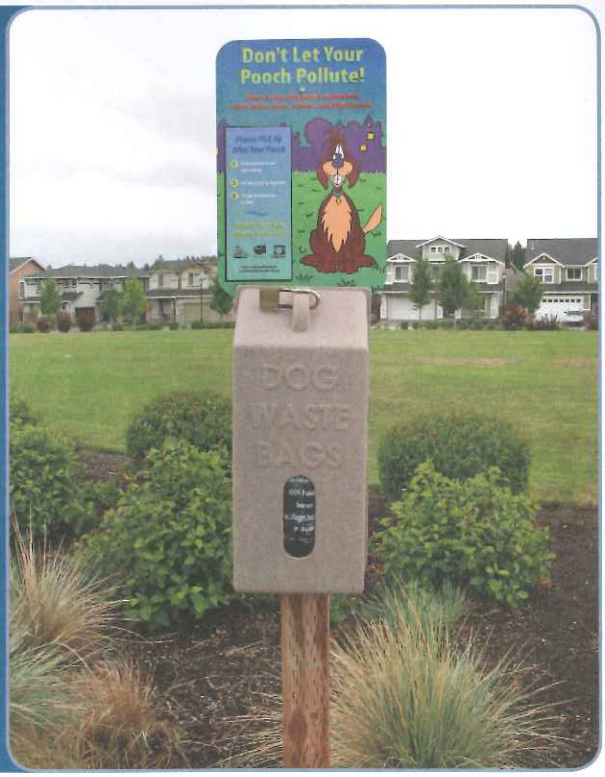
If you would like to commit to helping make this important work happen, please email **stormwater.stewards@gmail.com** or call 360-867-2167 to receive the 2014 recruitment packet. Applications are due by April 21, and trainings begin on May 8 for eight subsequent Thursday evenings, plus additional field days on some Saturdays.

Free Pet Waste Stations Available

Dog poop is not fertilizer. It is actually raw sewage and is loaded with parasites, viruses and bacteria that can contaminate our waters and make people sick; especially children. The dog population of Thurston County generates around six tons of feces every day! Help keep our streams, pets and children healthy: scoop it, bag it and place it in the trash, every time!

Thurston County Water Resources can help. Does your neighborhood have community open space, especially near stormwater retention ponds where people often walk their dogs? Your neighborhood or development can receive a free "Don't Let Your Pooch Pollute "sign with an optional durable bag dispenser for easy and convenient clean-ups. Thurston County Water Resources will supply the sign, a bag dispenser and an initial supply of bags to stock the dispenser to homeowners associations, neighborhood associations and multi-family housing complexes. Homeowners Associations must agree to install the station and keep the dispenser stocked with bags after the initial supply is depleted.

For more information or to request a station, call (360)754-3355 ext. 6337 or email **maunc@co.thurston.wa.us**



Five Benefits from Taking Care of Your Stormwater Retention Pond

Does your neighborhood have a stormwater retention facility? In most Thurston County neighborhoods, the responsibility for maintaining such stormwater infrastructures belongs to the HOA/property owners in the neighborhood.

It may take a little time and coordination, but taking care of your neighborhood stormwater pond (and associated stormwater facilities) will help protect water quality and benefit your neighborhood. Here's a list of five of the major benefits from maintaining stormwater ponds:

1. Save money on costly repairs. Proper maintenance can save money and extend the life of the facility and the original landscape plantings.
2. Prevent localized flooding.
3. Provide habitat for wildlife such as birds and insect eating amphibians.
4. Maintain property values, as appearance is important to the neighborhood image and property values.
5. May provide an area for light recreation activities, habitat for wildlife and/or open space.

Where to Start:

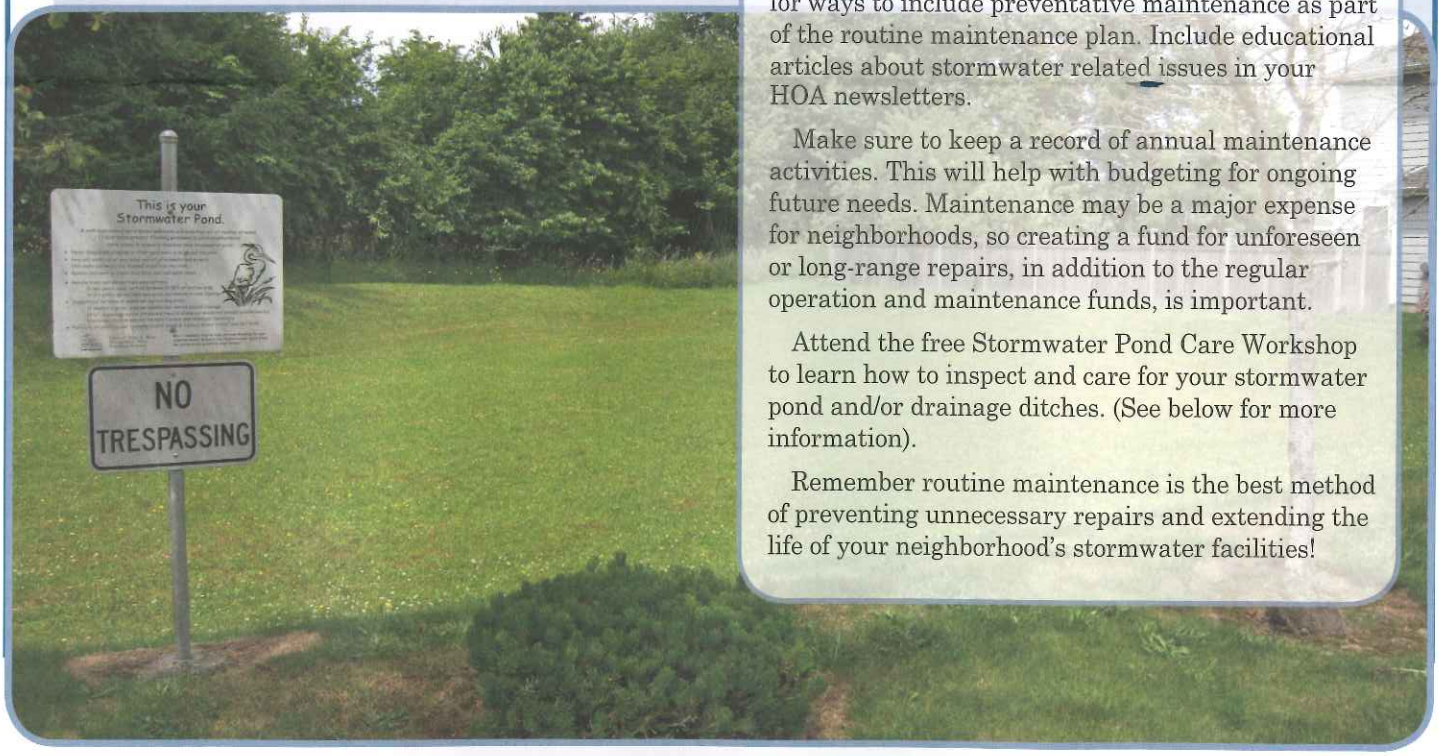
Schedule an on-site visit with a Thurston County Water Resources specialist to identify routine maintenance, non-routine maintenance and possible long range maintenance needs. This will help in understanding how your stormwater facility works and its specific maintenance needs.

Also, consider forming a neighborhood landscape committee to research and write the maintenance plan and schedule. An advantage of this approach is that the HOA will end up with an informed committee that can troubleshoot problems and look for ways to include preventative maintenance as part of the routine maintenance plan. Include educational articles about stormwater related issues in your HOA newsletters.

Make sure to keep a record of annual maintenance activities. This will help with budgeting for ongoing future needs. Maintenance may be a major expense for neighborhoods, so creating a fund for unforeseen or long-range repairs, in addition to the regular operation and maintenance funds, is important.

Attend the free Stormwater Pond Care Workshop to learn how to inspect and care for your stormwater pond and/or drainage ditches. (See below for more information).

Remember routine maintenance is the best method of preventing unnecessary repairs and extending the life of your neighborhood's stormwater facilities!



FREE Stormwater Pond Care Workshop

If your neighborhood has a stormwater retention pond, then chances are it is the Homeowners Association's responsibility to monitor and maintain it. Maintaining your community's stormwater retention pond is not rocket science.

You can learn how to inspect and care for your pond and other stormwater infrastructure components in the free workshop. The workshop is especially recommended for HOA board members. Join us on Saturday, April 19 from 9 a.m. to noon. To register, email **Linnca@co.thurston.wa.us** or call (360) 867-2095.

Stormwater Utility Completes Facilities Mapping Project

The Thurston County Storm and Surface Water Utility is nearing completion of its Infrastructure Mapping Project. As required by the National Pollutant Discharge Elimination System (NPDES) Phase II permit, administered by the state Department of Ecology, each permit holder must develop and maintain a current map of their stormwater system. The County has been meeting this requirement through a multi-year data collection project that utilizes a combination of traditional ground survey methods and remote satellite sensing technology. The project was split into multiple phases over the years, with the first four years focusing on data collection in the NPDES permit areas of the county, and the final two phases covering the rest of the county. These methods have resulted in both expedient and highly accurate data collection.

Upon completion of the project, the County will have a comprehensive map of all its stormwater facilities. Vital information is provided for each type of stormwater structure such as exact location, connections to other structures, direction of stormwater flow, location, physical condition and potential maintenance needs. Structures mapped and inventoried include catch basins, roadside ditches and swales, conveyance pipes, stormwater ponds, and discharge locations.

Much of the data collected has already been put into use within the County's asset management program. This has enabled staff to work dynamically with the data to improve efficiency and to better manage maintenance and inspection activities. The mapping of flow directions has also been effective for spill response and tracking of pollution.

Up to this point, the County has been able to identify and capture information for over 9,000 catch basins, 600 stormwater ponds, and 13,000 pipes and culverts. Over 650 miles of ditches and swales have also been mapped. These numbers will grow as staff continues with review of current data and from future development within the county.

Natural Yard Care Grant — *Go Green Naturally!*

Starting this February, Thurston County will be testing out different methods to help residents learn how to achieve healthy green lawns, naturally, thanks to a grant from the WA Department of Ecology. The goal of the project is to learn which outreach methods are most effective at helping residents learn how to reduce the use of chemical pesticides and fertilizers on their lawns while still achieving healthy green lawns. While only certain neighborhoods are being targeted to participate in the pilot program, the County expects to take the lessons learned and apply them to other parts of the county in the future.

Some of the biggest threats to water quality in Thurston County come from pesticide and fertilizer use. Chemical use on lawns is more than just a water quality issue. In fact, according to the US EPA, fertilizer use is one of the major sources of nitrates/nitrites in drinking water, and studies conducted locally have found numerous pesticide chemicals in local streams.

Through on-site consultations with lawn care professionals, free soil tests and other free natural lawn care products, participants will experience first-hand just how easy it is to have a green lawn naturally. If you are interested in learning more about natural lawn care practices go to **http://www.co.thurston.wa.us/stormwater/utility/utility-gardening.html**

Here are some tips to make sure you get the most out of your fertilizer:

1. Test your soil to find out your fertilizer needs – it's best to feed it only what it needs.
2. Select a slow-release fertilizer – the nutrients are less likely to wash away beyond the root zone.
3. Skip fertilizer-pesticide combinations – they are more expensive, and they spread pesticides where they are not needed.
4. Follow package directions – over-fertilization can make your grass weak and vulnerable to disease.
5. Add lime in the fall if your soil test results show your soil is acidic.

Following these 5 easy tips will help keep your lawn healthy, while protecting water quality in Thurston County.

How to Select a Slow Release Fertilizer:

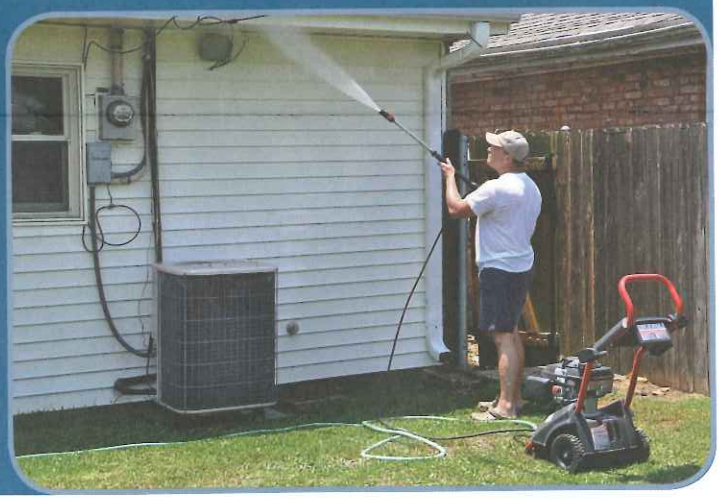
- Look for the percent of water-insoluble nitrogen. It should be at least ½ the total amount of nitrogen. (If the fertilizer contains 8% nitrogen, then 4% should be water-insoluble nitrogen.)
- You can also find a list of slow-release fertilizers by brand name in the Grow Smart, Grow Safe Guide available on the County's website at: **http://www.co.thurston.wa.us/stormwater/utility/utility-gardening.html**

Make Sure Your Household Maintenance Practices Don't Result in an Illicit Discharge

It's important to maintain your home, landscapes and cars. Unfortunately, if done incorrectly, some of these maintenance practices could lead to an illicit discharge. Here are some tips to help you keep it green while you clean:

- Take your car to a commercial car wash or wash it on the lawn so that the wash water drains to a landscaped area. (Make sure to avoid parking over drinking wells or septic systems.)
- When pressure washing homes, garages or sheds, use the lowest setting and aim the wash water to a landscaped area. If possible, avoid using cleaning products and sweep/rake up paint chips to prevent them from entering stormdrains.
- Sweep sidewalks and driveways instead of using pressure washers (place swept up debris in garbage), or aim the wash water to a landscaped area.
- When cleaning carpets, filter and flush dirty wash water (if on sewer) or filter and spread over landscaped area if you are on a septic system (dirty wash water and cleaning agents can harm your septic system). If you are having your carpets professionally cleaned, ask the company about their wash water disposal policy first.
- Dispose of yard waste in a compost bin, yard waste bin or at the Thurston County Waste and Recovery Center in Hawks Prairie. Never dispose of yard waste in drainage ditches or stormwater ponds, as they interfere with the function of these stormwater facilities.

Following these maintenance tips will help ensure that only rainwater will go down the stormdrain (or into a drainage ditch or stormwater pond). For more tips on how to reduce stormwater pollution, go to **www.co.thurston.wa.us/stormwater/utility/utility-manage.html**



Report Illicit Discharges (Dumping) in Stormwater Facilities

In Thurston County it is illegal to dump or spill anything but rain water, with certain limited exceptions, into a storm drainage facility. A person or business that discharges pollutants into a storm drainage facility could be charged with a misdemeanor and fined up to $1,000 per violation and/or imprisonment up to 90 days (Ordinance 14404).

To report illegal dumping in storm drains, call the Hazardous Waste Hotline number below, or click on our "Submit a Report" button at **www.co.thurston.wa.us/stormwater/dumping/dumping-home.html**

Common investigations involve: Illegal dumping of used motor oil or spills that contaminate soils, water bodies or ground water. Immediate attention is given to cases that represent a threat to public health or the environment or are in violation of the Nonpoint Source Pollution Ordinance.

Hazardous Waste Hotline (360) 867-2664 or Department of Ecology Spill Hotline for large scale spills (360) 407-6300 or call 911.

Utility Services

The Storm and Surface Water Utility, a ratepayer-financed program of the Resource Stewardship Department, reduces flooding, erosion and pollution caused by stormwater runoff, while protecting and enhancing aquatic habitat. Among other things, the utility:

- Creates programs designed to meet National Pollutant Discharge Elimination System (NPDES) permit requirements.
- Provides on-site consultations for ratepayers with drainage problems.
- Builds projects to reduce local stormwater flooding and pollution.
- Provides youth and adult education and coordinates Stream Team activities, along with our regional partners, to help protect local streams.
- Monitors water to protect streams and drinking water supplies from polluted runoff.
- Develops basin plans to guide future actions that might affect hydrology.
- Develops policies to reduce erosion and runoff caused by new development. (Policies are subject to review by the public and approval by county commissioners.)
- Inspects private, commercial and municipal stormwater facilities to ensure that regular maintenance is done.
- Inventories and maps the entire countywide stormwater facility system.
- Detects and eliminates pollution entering storm drainage facilities.
- Monitors water resources in flood-prone areas, rainfall and atmospheric data.

THURSTON COUNTY
WASHINGTON
SINCE 1852

SPLASH Newsletter
Thurston County
Storm and Surface Water Utility
929 Lakeridge Drive SW
Olympia, WA 98502

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Utility Awarded Grant to Identify Stormwater Retrofit Projects in Woodard Creek Basin

Just as our homes and cars need to be maintained, so too does the infrastructure that collects, treats and conveys stormwater runoff. The Stormwater Utility was recently awarded a $226,000 grant from the Washington State Department of Ecology to conduct a stormwater retrofit study for the Woodard Creek Basin. Stormwater retrofits include improving existing stormwater ponds, constructing new treatment and runoff controls or improving treatment in the county right-of-way.

A consulting team will work with the Stormwater Utility to identify and prioritize retrofit opportunities within the basin. A list of 15 to 20 potential projects will be developed and then prioritized to identify five projects for which pre-design reports will be prepared. These five projects will then be incorporated into the Utility's Capital Facilities Program for future construction.

Input from property owners within the Woodard Creek Basin will be solicited through two public open houses. The first is tentatively scheduled for the evening of Thursday, March 13 with a second one in June. Check the Water Resources website for more information as it becomes available: **http://www.co.thurston.wa.us/waterresources/**

Staff contact: Pat Allen, P.E. (360) 867-2078.
E-mail: allenp@co.thurston.wa.us

The Evergreen State College Receives Stormwater Impact Fee Rate Rebate from Thurston County

Thurston County Water Resources continues to offer a voluntary initiative for owners of certain types of non-residential properties, such as commercial businesses, office buildings, churches and schools. In 2013, the Evergreen State College was approved for the maximum 50% stormwater impact fee rebate resulting in a return of over $26,000 of its stormwater fees to the college. Evergreen demonstrated through their pollution control plan and through a comprehensive Stormwater Management Plan that they are effectively managing their stormwater in ways that reduce or remove pollutants from stormwater runoff on campus while using best management practices.

Through this program, property owners can help reduce pollution to Puget Sound and local streams, lakes and rivers, while helping to improve their bottom line at the same time. The purpose of the program is to protect and preserve water quality throughout Thurston County while also providing the following benefits:

- Increase landowner participation in actively managing the stormwater on their property.
- Promote implementation and maintenance of stormwater best management practices.
- Increase public awareness about stormwater pollution prevention.

For more information or to apply, go to: **http://www.co.thurston.wa.us/stormwater/utility/utility-credit.html**