



**DRAFT  
Stormwater Management Program  
(SWMP)**

**Last Updated: March 30, 2012**



**Prepared By:**

**Public Works Department  
Stormwater Services Program**

## **Background**

In 1987, Congress amended the federal Clean Water Act to include stormwater discharges in the National Pollutant Discharge Elimination System (NPDES) permit program. The Environmental Protection Agency (EPA) developed rules to implement the new stormwater requirements in two phases called Phase I and Phase II. The Washington State Department of Ecology (Ecology) implements these stormwater rules through municipal stormwater permits. The Phase I permit, which went into effect in 1990, covers large jurisdictions such as cities and counties serving more than 100,000 people. In 1999, EPA issued the Phase II stormwater permit regulations to cover stormwater discharges in urbanized areas that serve smaller populations (Ecology, 2006).

There are two separate Phase II municipal stormwater permits in the State of Washington, one for western Washington and one for eastern Washington. Ecology issued the NPDES Eastern Washington Phase II Municipal Stormwater Permit (Permit) in January 2007. The city of Pullman (City) was granted coverage under the Permit soon after. Nineteen other cities and parts of eight counties were also covered under the Permit. The Permit became effective February 16, 2007 and was later modified on June 17, 2009, which is the version the City is currently operating under.

The Permit is on a five year cycle with coverage originally extending until February 15, 2012. The effective date of the current Permit was extended until June 2012. The first Permit was designed to give jurisdictions an opportunity to develop their stormwater management programs and prepare for the next permit cycle which will likely require additional actions and an increased level of management and oversight. The City has spent the past five years developing its stormwater management program in accordance with the requirements of the Permit, including adoption of new ordinances, changing policies and procedures and purchasing new equipment.

The current Permit, as well as information related to issuance of the next Permit, can be viewed in its entirety on Ecology's website below.

<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseiiEwa/ewph2permit.html>

## **Hatley Creek Storm Drainage Basin Study**

In 2000, responding to citizen concerns and recognizing that stormwater runoff was a growing problem, the City hired consulting firm Gray & Osborne to conduct a study of the Hatley Creek drainage basin. Hatley basin is located in the southwest quadrant of town and drains approximately 760 acres (both city & county) which are experiencing increased development. The purpose of the study was to recommend a level of stormwater quantity control that seeks to decrease the existing peak rate of stormwater runoff in the basin, as well as provide water quality benefits. As a result of the study, the City requires enhanced stormwater detention design standards for all new and re-development within the Hatley basin (Gray & Osborne, 2000).

## **The Water Quality Problem**

Pullman's network of storm drains is classified as a municipal separate storm sewer system (MS4). The storm drain system is separate from and therefore does not convey stormwater to the City's wastewater treatment plant. Stormwater runoff has been identified by Ecology as "the number one water pollution problem in the urban areas of our state" (Ecology, 2007). Pollutants commonly found in stormwater include fertilizers, pesticides, vehicle fluids, trash, sediment and pet waste. Stormwater can also contribute to problems associated with flooding.

Most storm drains within Pullman empty directly into the South Fork Palouse River (SFPR) or one of its main tributaries that flow through town. According to Ecology, the SFPR is on the State's list of impaired water bodies for not meeting water quality criteria for temperature, dissolved oxygen, pH and fecal coliform bacteria. Ecology is currently in the process of developing Water Clean-up Plans or Total Maximum Daily Loads (TMDLs) for each of these parameters within the SFPR watershed. Water quality sampling related to the TMDLs has shown that Pullman's stormwater quality is similar to other urban areas across the nation, indicating a need for enhanced stormwater management.

## **Stormwater Management Program (SWMP)**

The city of Pullman has been managing its stormwater for a long time. However, to be more effective and successfully meet permit compliance requirements, enhanced coordination between the various staff and departments that deal with stormwater issues needs to occur. The Permit requires the city of Pullman to develop and implement a comprehensive Stormwater Management Program (SWMP). An updated SWMP documenting the actions the City plans to implement to satisfy State requirements and protect water quality is required to be made available to Ecology by March 31<sup>st</sup> and to the public by May 31<sup>st</sup> of each year. The SWMP and other related documents are available on the City's Stormwater Services website.

Early in 2007, the City hired consulting firm Otak, Inc. to assist with development of Pullman's SWMP. Otak worked closely with City staff and in September 2007 produced the *Final Stormwater Program Implementation Plan (Attachment A)*. The Implementation Plan contains the following Sections:

- Background
- Stormwater Program Definition Process
- Regulatory Gap Analysis - Process & Results
- Detailed Annual Stormwater Program Implementation Matrices
- Resources Needed for Pullman's Updated Stormwater Program
  - Estimated Annual Program Revenue Needs & Sources
  - NPDES Equipment & Funding Needs
  - Capital Improvement Plan

As required by the Permit, the Implementation Plan addresses the following elements:

- Public Education and Outreach
- Public Involvement & Participation
- Illicit Discharge Detection & Elimination
- Construction Site Stormwater Runoff Control
- Post-Construction Stormwater Management for New Development and Redevelopment
- Pollution Prevention & Good Housekeeping for Municipal Operations
- Compliance with Total Maximum Daily Load (TMDL) Allocations
- Monitoring & Program Evaluation
- Reporting & Recordkeeping

In 2008 the City chose to create a new Stormwater Services Division within the Public Works Department and hired a program manager to coordinate all the activities identified in the Implementation Plan.

In January 2009, Otak, Inc. produced the *Stormwater Program Funding Alternatives and Financial Plan (FAFP)*. The FAFP includes the latest program and projected budget needs. The FAFP is attached to the Draft SWMP as **Addendum 1** and serves as an update to the Implementation Plan.

Among other things, the Permit required the City to adopt ordinances addressing illicit discharge detection and elimination (IDDE), construction runoff and post-construction stormwater management. The City adopted an IDDE ordinance in August 2009 which added a new Chapter 10.31 to Pullman City Code (PCC). The City also adopted a combined Construction and Post-Construction stormwater ordinance in January 2011 which added a new Chapter 10.32 to PCC.

A stormwater field technician/inspector was hired in January 2010 to implement and enforce the provisions in these program areas. Also, in accordance with the Implementation Plan, budget has been allocated to the Maintenance & Operations Division to ramp up maintenance activities related to the City's stormwater system. An operations and maintenance plan (O&M Plan) that prescribes regularly scheduled maintenance activities on the stormwater system has been developed. In 2011, the City purchased a jet-vector truck and other specialized equipment to begin implementing the O&M Plan.

### **Stormwater Utility**

Much like water supply and sanitary sewer systems, maintaining and replacing an aging storm drain infrastructure and providing other stormwater management services is very costly. In February 2009, the Pullman City Council created a storm drainage and surface water management utility to fund the stormwater program. The utility currently only charges fees for developed properties with impervious surfaces. In 2011, an

Advisory Committee was formed to provide the City Council with a recommendation on whether or not undeveloped properties should also be charged a stormwater utility fee. After a six month process, the Advisory Committee recommended to not charge undeveloped properties.

The codified stormwater utility ordinance is located in Chapter 10.30 of PCC and can be viewed on the City's website below.

<http://www.pullman-wa.gov/>

## **Recent Activities**

2011 saw continued progress toward development of the City's SWMP and Permit compliance. Notable activities included:

### **General Program Administration**

- Continued management of and compliance with the City's NPDES Phase II Municipal Stormwater Permit.
- Successfully completed and closed 3 Washington Department of Ecology grants totaling \$268,809. The grants were used for the Missouri Flat Creek Channel Improvements project and NPDES Phase II permit implementation including purchase of a new jet-vector truck for performing maintenance on the City's storm drain system.
- Continued participation in the Eastern Washington NPDES Coordinators Forum, including collaborative review of a draft of the next Phase II Permit.
- Continued participation in the SFPR Fecal Coliform Bacteria TMDL process.

### **Public Education & Outreach**

- Continued education and outreach efforts via website, news media, direct mailings and personal interaction with the public including a presentation at the Pullman Kiwanis.
- Partnered with the Palouse-Clearwater Environmental Institute (PCEI), Pullman School District and private schools to integrate stormwater related information into the 5<sup>th</sup>, 8<sup>th</sup> and 10<sup>th</sup> grade science curriculum.
- Sponsored several WSU graduate student interns including an MBA, 2 Engineering students and one Communications student. The Engineering students worked on updating our detention pond and outfall inventories. The MBA and Communications students worked primarily on the pet waste management program.

### **Public Involvement**

- Partnered with the Palouse-Clearwater Environmental Institute (PCEI) to sponsor the 7<sup>th</sup> Annual Pullman Stream Clean-up event in April. 100 volunteers spent 300+ hours cleaning Pullman's streams by removing an estimated 12 yards of trash and recyclables.
- Launched Pullman Adopt-a-Stream Program.

### **Illicit Discharge Detection & Elimination (IDDE)**

- Completed initial inventory of stormwater detention ponds.
- Identified and eliminated 8 private illicit sanitary connections to storm.
- Responded to and investigated stormwater/illicit discharge related complaints.
- Continued development of a pet waste management program, including applying for a grant to build and install 75 new pet waste stations in and along Pullman's parks and trails.
- Initiated the Stadium Way Fecal Coliform Bacteria pilot study to identify sources of fecal coliform bacteria within the drainage basin near the stormwater outfall to Missouri Flat Creek at Stadium Way and North Grand Avenue in Pullman.

### **Construction Site Runoff Control**

- Reviewed 21 Site Plans of new construction (16 projects, some required re-submittal).
- Reviewed 25 Erosion and Sediment Control plans for projects of Tri-plex size or smaller (mostly single family residential homes).
- Conducted 113 documented construction related erosion control inspections.
- Facilitated adoption of the Construction/Post-Construction Stormwater Ordinance.
- Managed and ensured compliance with the City's NPDES Construction Stormwater Permit for the North Grand Avenue Widening project.
- Participated in collaborative development of the Eastern Washington Erosion & Sediment Control Field Guide.
- Developed an interagency agreement with Washington State University to satisfy the City's Construction (S5.B.4.) and Post-Construction (S5.B.5.) obligations under the Phase II Municipal Stormwater Permit.

### **Post-Construction Stormwater Management**

- Continued coordination with Engineering Division staff to inventory all detention ponds and other public & private stormwater facilities.
- Facilitated adoption of the Construction/Post-Construction Stormwater Ordinance.

### **Pollution Prevention & Good Housekeeping – Municipal Operations**

- Continued management of the City's NPDES Industrial Stormwater Permit for the Pullman Transit facility, including reporting, inspections, water sampling and staff training.
- Completed development of an Operations and Management (O&M) Plan for controlling pollution originating from all City facilities.

2012 promises to be even busier with the following activities already underway or planned:

### **Stadium Way Fecal Coliform Bacteria Study**

The City will complete the pilot study begun in 2011 to identify sources of fecal coliform bacteria within the drainage basin near the stormwater outfall to Missouri Flat Creek at

Stadium Way and North Grand Avenue in Pullman. As part of the TMDL process, Ecology identified this outfall as needing a reduction in fecal coliform contribution. In addition to traditional grab sample methods, the pilot study is using multiple ultra-sensitive temperature probes deployed throughout the drainage basin to identify potential illicit connections. The drainage basin is shared by both the City and Washington State University (WSU).

### **Stormwater in the Classroom**

The City will continue partnering with PCEI, the Pullman School District and private schools to challenge students with water quality and stormwater related exercises that compliment the science curriculum.

### **Construction**

Stormwater Services will be hosting an Erosion and Sediment Control field workshop for local engineers, developers and construction contractors to view proper installation of best management practices (BMPs). The field workshop will run concurrently with the second day of a 2-day CESCL certification course also sponsored by the City.

Also, Stormwater Services will coordinate with the Engineering Division to update existing and/or add new Standard Drawings for erosion and sediment control BMPs.

### **Annual Pullman Stream Clean-up**

The City will partner again with PCEI to sponsor the 8<sup>th</sup> Annual Stream Clean-up event on Saturday April 7<sup>th</sup>.

### **Pullman Adopt-a-Stream Program**

The City will continue to partner with PCEI to implement a program modeled after the adopt-a-highway program, where community groups and/or businesses can “adopt” a segment of stream in town and then be responsible for keeping it clean. Highlights of the program include participation in the Annual Stream Clean-up in the spring and the Three Forks River Rendezvous in the fall. To date, 15 of the 20 identified segments of stream have been adopted.

### **Stadium Way Storm Line Repair**

As part of its capital improvement program, the City plans to repair approximately 1,000 ft of aging and failing stormwater main on Stadium Way from Grand Avenue to “B” St.

### **Post-Construction Stormwater Management**

The City plans to begin inspecting both public and private stormwater management facilities as part of the annual certification process prescribed in PCC 10.32.

### **Stormwater Utility Update**

The original stormwater utility was established by measuring impervious surfaces using aerial photographs from April 2006. Using updated photographs from 2010, the City will review and if necessary amend existing customer accounts. New accounts will also be

added as needed. New GIS maps of the impervious surface within Pullman will be created as part of this process.

## **Contacts**

Questions about Pullman's Stormwater Management Program can be directed to:

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Questions about the Eastern Washington Phase II Municipal Stormwater Permit can be directed to:

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WA Dept. of Ecology  
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(509) 329-3554  
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## **References**

Gray & Osborne, Inc. 2000. *Hatley Creek Storm Drainage Basin Study*.

Washington State Department of Ecology. 2006. *Frequently Asked Questions about Municipal Stormwater Permits*. Publication No. 06-10-005 (revised).

Washington State Department of Ecology. 2007. *Protecting Washington's Waters From Stormwater Pollution*. Publication No. 07-10-058.

**ATTACHMENT A**

***City of Pullman  
Final Stormwater Program Implementation Plan  
September 10, 2007  
Otak, Inc.***

**ADDENDUM 1**

***City of Pullman  
Final Stormwater Program  
Funding Alternatives and Financial Plan  
January 13, 2009  
Otak, Inc.***