



Stormwater Management Program (SWMP) Plan

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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 currently 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) applied for and was granted coverage under the Permit soon after. Eighteen other cities and six counties in eastern Washington are also covered under the Permit. The first Permit became effective February 16, 2007 and expired July 31, 2014. The second Permit became effective August 1, 2014 and is scheduled to expire July 31, 2019. This is the Permit the city is currently operating under. Washington State University (WSU) is covered under the same Permit, but is considered a “secondary permittee” within the jurisdiction of the City of Pullman.

The City has spent the past twelve years developing its stormwater management program in accordance with the requirements of the Permit, including adoption of new ordinances, updating policies and procedures, purchasing equipment, implementing projects, performing maintenance and training staff.

The current Permit can be viewed in its entirety on Ecology’s website below.

<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Eastern-Washington-Phase-II-Municipal-Stormwat-1>

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 have experienced a high rate of development. The purpose of the study was to recommend a level of stormwater flow control that decreases 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 projects 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 detergents, fertilizers, pesticides, vehicle fluids, litter, sediment and pet waste. Unmanaged stormwater and neglected infrastructure 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. The tributaries include Sunshine Creek, Paradise Creek, Dry Fork Creek, Missouri Flat Creek and Hatley Creek. 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 has completed a Water Clean-up Plan or Total Maximum Daily Load (TMDL) for fecal coliform bacteria and is in the process of developing TMDLs for the remaining parameters. TMDLs have also been completed for Ammonia-N and Toxics (PCBs & Dieldrin) for the larger Palouse River basin, which includes the SFPR. 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 a robust stormwater management program.

Stormwater Management Program (SWMP) Plan

The Permit requires the City to develop and implement a comprehensive Stormwater Management Program (SWMP) Plan. An updated SWMP Plan 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 31st and to the public by May 31st of each year. The most current SWMP Plan and other related documents are available on the City's Stormwater Services website below.

<http://www.pullman-wa.gov/departments/stormwater-services>

Early in 2007, the City hired consulting firm Otak, Inc. to assist with development of Pullman's first SWMP Plan. Otak worked closely with City staff and in September 2007 produced the *Final Stormwater Program Implementation Plan*. 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 addressed 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 Stormwater Services Division within the Public Works Department and hired a program manager to coordinate the activities identified in the Implementation Plan.

In January 2009, Otak, Inc. produced the *Stormwater Program Funding Alternatives and Financial Plan (FAFP)*. The FAFP included program and projected budget needs for the newly created program. The FAFP served as a necessary update to the Implementation Plan. Funding decisions related to the Stormwater Services Division now follow the City's annual budget development and approval process (see *Stormwater Utility* below).

Among other things, the Permit required the City to adopt ordinances addressing illicit discharge detection and elimination (IDDE), runoff from construction sites 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.

In accordance with the Implementation Plan, stormwater program budget has been allocated to the Maintenance & Operations Division to perform 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 City's stormwater system has been developed. In 2011, the City purchased a jet-vactor truck and other specialized equipment to begin implementing the O&M Plan. Also, budget is made available to other City divisions and departments including the Engineering Division which is reimbursed with Stormwater funds when providing surveying, drafting, mapping and other technical support.

Stormwater Utility

Much like the City's 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 and corresponding enterprise fund to sustain the stormwater program. This provides a permanent tracking

and financial planning mechanism as part of the city's overall budget development process. The annual budget for Stormwater Services adopted by City Council in December of each year. The utility currently only charges fees for developed properties with impervious surfaces. In 2011, an Advisory Committee 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 facilitated process, the Advisory Committee recommended to not charging undeveloped properties.

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

<http://www.codepublishing.com/WA/Pullman/>

The following Stormwater Management Program activities planned for 2019:

General Program Administration (including S5.A. and S9)

- Continue management of and compliance with the City's NPDES Phase II Municipal Stormwater Permit (Permit).
- Continue to track program costs, actions and activities.
- Continue to represent Pullman on the Eastern Washington Stormwater Group (EWSG).
- Coordinate with Ecology on Permit implementation.
- Coordinate with WSU on Permit implementation (Secondary Permittee).
- Coordinate with other Permittees (EWSG).
- Complete Phase II Municipal SW Permit Annual Report by March 31st.

Public Education & Outreach (S5.B.1.)

- Continue to implement the public education and outreach program strategy.
- Continue collaborating with the Pullman School District and private schools to challenge students with water quality and stormwater related exercises that complement the science curriculum in the 3rd, 4th, 5th and 6th grades.
- Continue implementing the Adopt-A-Stream program, where community groups and/or businesses can "adopt" a segment of stream in town and then be responsible for keeping it clean. Signage provided to identify the groups and the program.
- Continue the Annual Stream Clean-up event in April. Other major partners involved in the Stream Clean-up include the Palouse Conservation District, Pullman Parks & Recreation, Pullman Transit, Pullman Disposal Service, Pullman Civic Trust and numerous local businesses that donate food and other materials for the event.
- Continue coordination of Missouri Flat Creek Riparian Restoration Project: WSU College of Agricultural, Human and Natural Resource Sciences (~400 students).

Public Involvement (S5.B.2.)

- Post Stormwater Management Program (SWMP) Plan on website by May 31.

- Post Phase II Municipal SW Permit Annual Report on website by May 31.
- Prepare for and attend City Council Meetings.
- Respond to Public Records Requests.

Illicit Discharge Detection & Elimination (S5.B.3. & G3)

- Continue implementing and enforcing PCC 10.31 to prohibit illicit discharges.
- Continue implementing the City's IDDE compliance strategy.
- Provide IDDE training to municipal staff.
- Maintain and monitor the IDDE citizen hotline.
- Maintain a map of the City's MS4.
- Respond to, investigate, resolve and report to Ecology formal IDDE events.
- Respond to, investigate and resolve other, non-IDDE related complaints including pet waste, solid waste, drainage, etc.

Construction Site Stormwater Runoff Control (S5.B.4.)

- Continue implementing and enforcing construction related elements within PCC 10.32 to reduce pollutants from construction activities.
- Issue City of Pullman Stormwater Permits for new and re-development projects.
- Review Site Plans and Stormwater Pollution Prevention Plans (SWPPPs) for large grading and construction projects.
- Review Erosion and Sediment Control (ESC) plans for projects of Duplex size or smaller (mostly single-family residential homes).
- Conduct construction related erosion control inspections.
- Continue administration of an Inter-Agency agreement with WSU for regulation of Construction and Post-Construction activities on campus. WSU's Environmental Health and Safety (EHS) Department submits an annual report to Stormwater Services in February documenting these activities.
- Provide information on training to construction operators and City staff.

Post-Construction Stormwater Management (S5.B.5.)

- Continue implementing and enforcing post-construction elements within PCC 10.32.
- Review drainage reports and civil drawings of post-construction stormwater BMPs included in site plans for newly proposed development.
- Inspect post-construction BMPs at construction sites, during installation.
- Inspect post-construction BMPs after project completion (within 5 years).
- Ensure stormwater facility O&M plans provided for large projects with post-construction BMPs.
- Provide information on post-construction BMPs for local design professionals.

Municipal Operations and Maintenance (S5.B.6.)

- Continue implementation of the City's Stormwater Operations and Maintenance (O&M) Plan.
- Inspect City stormwater treatment and flow control facilities.
- Spot-check City stormwater treatment and flow control facilities after major storm

events (10-year, 24-hour or larger).

- Perform maintenance on City stormwater facilities and infrastructure.
- Repair damaged City stormwater facilities and infrastructure.
- Update the City's Stormwater Operations and Maintenance Plan as needed.
- Develop Stormwater Pollution Prevention Plans (SWPPPs) for the City's material storage, heavy equipment storage and maintenance areas.
- Provide City staff training.

Compliance with TMDLs (S7)

- Coordinate with Ecology's TMDL Lead on TMDL implementation.
- Coordinate with WSU-EHS on TMDL implementation.
- Continue implementation of pet waste management program, including:
 - Inspect and perform maintenance on 80 pet waste stations and 20 waste receptacles.
 - Install pet management signs as needed.
 - Coordinate volunteer activities.
- Continue implementation of the Dry Fork Creek fecal coliform bacteria monitoring plan.
- Implement Fecal Coliform Bacteria TMDL WLA Outfall Progress Study.
- During the SEPA process, continue considering the potential for projects to increase runoff and sources of fecal coliform bacteria (City of Pullman Public Works and Planning Departments).
- Repair and/or replace public sanitary sewer lines and sanitary sewer manholes suspected of being sources of fecal coliform bacteria to the City's stormwater system and/or surface waters.

Monitoring and Assessment (S8)

- Continue to collaborate with other Permittees on Effectiveness Studies.
 - Spokane Valley: Sand Filter Sidewalk Vault (TAG member)
 - City of Wenatchee: Mobile Contractor Education & Outreach
 - Pullman – Pilot survey of private carpet cleaners

Stormwater Studies, Capital Improvement and Infrastructure Projects

Inspections of Pullman's MS4 have revealed a need for in-depth study of and repair and/or replacement of portions of the City's stormwater infrastructure.

Stormwater studies/projects planned for 2019:

- TMDL WLA Outfall Monitoring (\$25,000)
- Dry Fork Cr. Water Quality Monitoring (\$20,000)
- Itani Linear Park Utility Access Paving (\$20,000)
- Autumn-Summer Utility improvements (\$92,000)
- Stormwater Improvements 2019
 - Crestview (est. \$51,000)
 - Rocky Way (est. \$28,176)

- Sunnyside Park Entrances on Old Wawawai Rd (est. \$75,250)
- Spring St. (est. \$279,168)

Contacts

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References

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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. 07-10-05.