

Stormwater Management Program

City of Tumwater, Washington

2011 Update



Written Pursuant to:
Western Washington NPDES Phase II
Municipal Stormwater General Permit
#WAR045020

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Background

Stormwater runoff is generated when precipitation from rain and snowmelt events flows over land or impervious surfaces and does not percolate into the ground. As the runoff flows over the land or impervious surfaces (paved streets, parking lots, and building rooftops), it accumulates debris, chemicals, sediment or other pollutants that could adversely affect water quality if the runoff is discharged untreated. The primary method to control stormwater discharges is the use of Best Management Practices (BMPs). In addition, most stormwater discharges are considered point sources and require coverage under a National Pollutant Discharge Elimination System (NPDES) permit.

During the early 1990's, the Environmental Protection Agency (EPA) created the NPDES to address the high levels of pollutants entering our nation's waters. The permitting system requires that waste producers having direct discharges to surface waters undergo an extensive permitting process to demonstrate that the impacts of respective industrial operation be minimized. Since the inception of the program, NPDES has been expanded to include stormwater issues.

Under the first phase of the permitting system, jurisdictions with populations of 100,000 or greater were required to go through the NPDES permitting process. Smaller jurisdictions like the City of Tumwater, with populations between 10,000 and 100,000 residents, have since been required to have a Municipal Stormwater Permit as part of Phase II of the program.

The Department of Ecology (DOE) has the delegated responsibility to implement NPDES requirements within the State of Washington. Under the permit, affected jurisdictions are required to develop and implement a comprehensive Stormwater Management Program (SWMP) that includes, in general, the following components:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Controlling Runoff from New Development, Redevelopment and Construction Sites
- Pollution Prevention and Operations and Maintenance for Municipal Operations

The City of Tumwater's Stormwater Permit was issued by the Washington State Department of Ecology in January of 2007, and will expire on February 15, 2012.

Introduction

The City of Tumwater NPDES Permit defines an approved Stormwater Management Program (SWMP) as a “set of actions and activities comprising the components listed in S5.B. and S5.C.1. through S5.C.5., and any additional actions necessary to meet the requirements of applicable TMDLs.” The City of Tumwater SWMP was written to document and describe the programs implemented and actions taken to fulfill permit requirements and protect our water resources from the effects of stormwater pollution. To that end, the components of the SWMP are intended to “reduce the discharge of pollutants from regulated small Municipal Separate Storm Sewer Systems (MS4s) to the maximum extent practicable”, and meet the State’s all known, available and reasonable methods of prevention, control and treatment (AKART) requirements, for the primary purpose of protecting water quality. While the SWMP is designed as a “living document” that can be adapted at any point as better pollution prevention practices are discovered, this version describes the City of Tumwater’s program as it exists in 2011, and provides guidance for future years.

While many of the practices described in the SWMP relate directly to Best Management Practices (BMPs) for City staff to utilize for stormwater pollution prevention, substantial effort is also required and being made toward educating the public about stormwater issues, as well as increasing public involvement in pollution prevention solutions. Additionally, regulatory mechanisms outlining pollution prevention responsibilities of both private and public entities are required under the NPDES permit, and as such, have been incorporated into this SWMP.

The SWMP will be updated on an annual basis to include improvements in the program. As part of the process, the public is encouraged to be involved in the development of potential changes. Comments or questions regarding the SWMP can be directed to the City of Tumwater Water Resources Program at 360-754-4140, or email twilson@ci.tumwater.wa.us. The Stormwater Management Program is available for review in the stormwater section of the City’s website, located at www.ci.tumwater.wa.us

Stormwater Management Program Document Structure

This document is written in part to detail the status of the City’s compliance with the current NPDES permit. To that end, this document is structured such that individual permit requirements (in italics), are outlined by component. Program summaries, which describe pertinent program details, follow the requirements. Categorical budget expenditures are added at the end of each section in order to give an overview of resources that have been committed, or are expected to be committed in future years, to design, implement and sustain program components.

General Stormwater Program Permit Information

- Permitting Authority: Washington State Department of Ecology
- Permit Type: National Pollutant Discharge Elimination System (NPDES) Phase II
- Permit Number: WAR045020
- Permittee: City of Tumwater
- Date Issued / Effective Date: January 17, 2007 / February 16, 2007
- Permit Expiration Date: February 15, 2012

General MS4 Operator Information

- Operator Name: Jay Eaton, P.E.
- Operator Title: Public Works Director
- Represented Entity: City of Tumwater
- Mailing Address: 555 Israel Road SW
- City / State / Zip: Tumwater, WA 98501
- Phone Number: (360) 754-4140
- Email Address: jeaton@ci.tumwater.wa.us
- Co-Permittees: Not Applicable
- Population: 16,770
- Households: 5,659
- Area (sq. mi): 14.5
- Official Website: www.ci.tumwater.wa.us

Primary Contact

- Name: Dan Smith
- Title: Water Resources Program Manager
- Phone Number: (360) 754-4140
- E-mail Address: desmith@ci.tumwater.wa.us

Secondary Contact

- Name: Tim Wilson
- Title: Water Resources Specialist
- Phone Number: (360) 754-4150
- E-mail Address: twilson@ci.tumwater.wa.us

General Information for Receiving Waters

Listed below are all the identified receiving water bodies to which outfalls discharge:

Receiving Streams (creek, stream, river, etc.)	Receiving Water Bodies (lake, wetland, ocean, etc.)	Receiving Watersheds
Percival Creek Deschutes River Fish Trap Creek Black Lake Ditch	Capitol Lake Puget Sound Barnes Lake Trospen Lake Black Lake	WRIA 13 – Deschutes River WRIA 23 – Chehalis Basin

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S5.C.1.

Public Education & Outreach Permit Requirements

The SWMP shall include an education program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the Permittee. The goal of the education program is to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts. And education program may be developed locally or regionally.

The minimum measures are:

S5.C.1.a.

No later than two years after the effective date of this Permit, the Permittee shall provide an education and outreach program for the area served by the MS4. The outreach program shall be designed to achieve measurable improvements in the target audience's understanding of the problem and what they can do to solve it. Education and outreach efforts shall be prioritized to target the following audiences and subject areas:

S5.C.1.a.i.

General public

- *General impacts of stormwater flows into surface waters.*
- *Impacts from impervious surfaces.*
- *Source control BMPs and environmental stewardship actions and opportunities in the areas of pet waste, vehicle maintenance, landscaping and buffers.*

S5.C.1.a.ii.

General public, businesses, including home-based and mobile businesses

- *BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials.*
- *Impacts of illicit discharges and how to report them.*

S5.C.1.a.iii.

Homeowners, landscapers and property managers

- *Yard care techniques protective of water quality.*
- *BMPs for use and storage of pesticides and fertilizers.*
- *BMPs for carpet cleaning and auto repair and maintenance.*
- *Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.*
- *Stormwater pond maintenance.*

S5.C.1.a.iv.

Engineers, contractors, developers, review staff and land use planners

- *Technical standards for stormwater site and erosion control plans.*
- *Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.*
- *Stormwater treatment and flow control BMPs*

S5.C.1.b.

Each Permittee shall measure the understanding and adoption of the targeted behaviors among the targeted audiences. The resulting measurements shall be used to direct education and outreach resources most effectively, as well as to evaluate changes in adoption of the targeted behaviors.

S5.C.1.c.

Each Permittee shall track and maintain records of public education and outreach activities.

Public Education & Outreach Program Summary

Since 1990, the City of Tumwater has been committed to providing a stormwater based public education program. Since the inception of the Stream Team program over 20 years ago, the City has worked both independently and collectively with neighboring jurisdictions to raise public awareness regarding stormwater issues. The public education and outreach program has evolved significantly through the years, and currently encompasses many different smaller programs designed to disseminate information regarding stormwater issues to a wide variety of individuals.

Individual educational programs and outreach activities are evaluated and prioritized annually to assess effectiveness. Many programs have an evaluation component that is designed to measure the understanding and adoption of targeted behaviors among the targeted audience. In addition, the City participated in a regional survey in 2010 to further evaluate the community's level of understanding. The combined results of these evaluation techniques will be utilized to direct future education and outreach resources more effectively, and to evaluate changes in adoption of the targeted behaviors.

All targeted audiences outlined in the NPDES Permit, S5.C.1.a., receive stormwater related messages through many different means that include informational meetings and workshops, press releases, brochures, bill stuffer messages, newsletters, and local radio and television media. Program messaging will continue to be evaluated on an annual basis to ensure that all intended audiences continue to receive educational messages that are pertinent to their interests as well as utility outreach needs.

The Water Resources Department utilizes ASIST software for tracking all components of education and outreach, as well as many of the other requirements of the NPDES Permit. The 2010 ASIST report is included in this document as Appendix 6.

Currently, the City of Tumwater utilizes the following programs for stormwater related outreach and education:

General Education and Outreach

- Development of educational materials for the general public that discuss the impacts of stormwater runoff on surface waters and the overall impact of impervious surfaces. Best Management Practices (BMPs) are developed and distributed offering education and opportunities for environmental stewardship actions, pet waste reduction, vehicle maintenance, landscaping and stream buffer management.
- Development of BMPs for the general public and businesses, including home-based and mobile businesses, that focus on the use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials. The BMPs address the impacts of illicit discharges and how to report them.
- Development of BMPs targeting homeowners, landscapers and property managers that address yard care and landscape techniques protective of water quality, as well as the use and storage of pesticides and fertilizers. Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees are included to provide the residential site manager with an understanding of lower impact techniques. Also included in this series are BMPs for carpet cleaning, auto repair and maintenance and stormwater pond maintenance for sites engaged in these activities.
- Engineers, contractors, developers, review staff and land use planners are provided with technical standards for stormwater site and erosion control plans, low impact development techniques, including site design, pervious paving, retention of forests and mature trees and stormwater treatment and flow control BMPs. The 2010 Erosion Control and Drainage Design Manual provides specific technical information regarding these BMPs, and is available on the City's web site as well as through the Public Works Department.

In addition to the outreach materials associated with the following programs, general information and outreach materials can be obtained at the City of Tumwater Public Works counter, or on the City's website, located at www.ci.tumwater.wa.us

Stream Team Program

The City supports the local and regional Stream Team programs to develop and support educational curricula materials for distribution to area schools, including classroom presentations, field trips, field activities and creative learning exercises. Targeted audiences will include primary to middle school aged students.

Stream Team also facilitates “action projects” geared toward conservation and restoration of riparian areas and protection of water resources. Examples of these projects include tree plantings and maintenance of revegetated riparian areas, as well as storm drain marking projects.

Quarterly newsletters describing the recent work conducted by Stream Team (staff and volunteers), as well as upcoming scheduled activities are regularly posted to the City's website. All other materials are available upon request, or posted throughout the City's website located at www.ci.tumwater.wa.us

The City will also continue active participation and coordination for volunteer surface water monitoring through the Stream Team program. Monitoring activities include macroinvertebrate, fish-passage and habitat assessments and other biological surface water quality testing. Work plans containing detailed objectives and goals are developed annually as part of the regional Stream Team program. These work plans are reviewed annually to meet the changing needs of the community and the stormwater program goals.

South Sound GREEN Participation

The City of Tumwater coordinates with staff from the Global Rivers Environmental Education Network (GREEN) to convey messages important to the utility's resource conservation role and watershed protection. Participation in GREEN programs includes providing materials necessary for educational outreach to targeted audiences and supporting opportunities for participation in educational and watershed stewardship programs such as an annual water quality monitoring program.

City staff also coordinates with South Sound GREEN to develop and support educational curricula materials for distribution to area schools, including classroom presentations, field trips and creative learning exercises. Targeted audiences will include primary to middle school aged students. An interlocal agreement is renewed every five years that outlines and provides funding for the South Sound GREEN program. The current agreement is in place through 2016.

Technical Assistance Program

The City will continue to provide technical assistance to local businesses and homeowner associations to increase awareness and technical expertise on necessary maintenance, water quality, habitat protection and water quality impacts.

Technical assistance includes, in general, a site visit and inspection, assessment of needs and/or concerns and follow-up to ensure necessary stormwater facility maintenance occurs in a timely fashion.

Pollution Prevention Program

The City periodically conducts outreach to Tumwater businesses with the assistance of Thurston County Environmental Health. The Business Pollution Prevention program has multiple goals, but focuses

primarily on the proper handling, use, storage and disposal of hazardous materials, as well as providing guidance on selecting environmentally-friendly products in hopes of reducing these materials in the watershed. Stormwater Best Management Practice discussions are also an integral part of the Pollution Prevention Program.

In recent years, this campaign has been targeted to audiences in the City's Wellhead Protection Areas (WHPAs) and operates on a two year cycle. Businesses within WHPAs receive a technical assistance visit, at a minimum, every six years. Higher risk businesses will undergo a site assessment every two years.

The City is currently in the process of expanding this program to provide assessments to businesses outside the WHPAs in an effort to ensure these materials are used responsibly

Stormwater Pond Maintenance Workshops

Staff routinely coordinates stormwater pond maintenance workshops targeted to homeowner associations, maintenance contractors and property management firms. These workshops review stormwater facility maintenance responsibilities, regulatory requirements and maintenance standards in an effort to ensure necessary work is conducted regularly and to the defined standards. Technical site visits often result as part of these general workshops.

Community Car Wash Kit Program

Community car washes are important fundraisers for worthy causes. Unfortunately, they can also cause environmental harm. Very often, groups hold community car washes on parking lots, not realizing that the soapy water running into the storm drain may empty into nearby surface waters. Car wash water and the dirt it carries may be toxic to fish and other aquatic life.

To ensure these car washes do not impact surface or groundwater, the City notifies local businesses known to support such events of the risks of contaminated runoff and assesses the level of protection needed to prevent the potential risks from becoming real impacts to the MS4 and/or receiving waters. Many sites have appropriate treatment in place; however, if a site is identified to have a direct discharge to the stormwater system, the business is asked to remind the community group to contact the City for a free car wash kit as long as there is a viable location for the discharge to sanitary sewer.

The "Clean Cars, Clean Streams" kits provided by the City include sidewalk signage, catch basin seals, a discharge pump and a hose to direct runoff to the sanitary sewer. Sites that have appropriate treatment already in place are provided with storefront signage acknowledging their support for community fundraisers in an environmentally-friendly manner.

The City also encourages the use of coupon programs provided by local car washes as an alternative to traditional fund raising car washes. These programs offer coupon books to community groups at a reduced cost and in turn, the groups can re-sell the coupons for profit. This approach is successful in

directing the public to utilize car washes that offer not only stormwater BMP's, but also good water conservation practices.

Tumwater Pet Waste Program

This program is designed to educate the general public and targeted audiences about the potential for pet waste to impact surface waters and how each can address the problem. Targeted audiences include veterinarian offices, pet stores and registered pet owners.

General outreach for the pet waste program utilizes conventional media outlets, utility bill stuffers, web site, brochures and direct mail. To encourage citizens to help reduce pollution from pets, City of Tumwater offers free dog waste signs, with optional dog waste bag dispenser, and educational brochures for neighborhood associations and other public use areas.

BMP Education & Outreach Program		
Compliance Date:	February 16, 2009	
Activity Year	Labor Budget	Non-Labor Budget
2011	550 hours	\$1,500
2012	550 hours	\$1,500
2013	550 hours	\$1,500
2014	550 hours	\$1,500
2015	550 hours	\$1,500
Total 5-Year Cost	2,750 hours	\$7,500

Has BMP been accomplished? YES

S5.C.2.

Public Involvement and Participation Permit Requirements

The SWMP shall include ongoing opportunities for public involvement through advisory councils, watershed committees, participation in developing rate-structures, stewardship programs, environmental activities or other similar activities. Each Permittee shall comply with applicable State and local public notice requirements when developing their SWMP.

The minimum performance measures are:

S5.C.2.a.

No later than one year from the effective date of this Permit, all permittees shall create opportunities for the public to participate in the decision-making processes involving the development, implementation and update of the Permittee's entire SWMP. Each Permittee shall develop and implement a process for consideration of public comments on their SWMP.

S5.C.2.b.

Each Permittee shall make their SWMP, the annual report required under S9.A and all other submittals required by this Permit, available to the public. The annual report, and SWMP that was submitted with the latest annual report, shall be posted on the permittee's website. To comply with the posting requirement, a permittee that does not maintain a website may submit the updated SWMP in electronic format to the Department for posting on the Department's website.

Public Involvement and Participation Program Summary

The City of Tumwater fosters public involvement and participation in the Stormwater Management Program on many levels. Participation is available via environmental programs such as the Stream Team volunteer network, as well as individual environmental stewardship activities. These programs are valued not only for their educational component, but also for their ability to raise understanding and awareness of stormwater-related issues and to encourage increased participation in surface water management practices, such as policy-making and regulation compliance.

The City continues to provide additional ongoing opportunities for public involvement through advisory councils, watershed committees, and participation at Public Works Committee and City Council open meetings.

The Stormwater Management Program, as well as any subsequent updates to the program, and annual reports required as part of the NPDES Stormwater Permit, is posted on the City of Tumwater website. Additionally, the website invites the public to become involved in the Stormwater Management Program through the submittal of comments, and/or by attending regular meetings of the Tumwater City Council.

The City's SWMP is reviewed annually for compliance with NPDES requirements and updated as needed. All updated SWMPs are posted to the website no later than March 31st following the year reviewed. All stormwater related activities under consideration through a public process are posted throughout the City's website, located at www.ci.tumwater.wa.us

Public Involvement and Participation		
Compliance Date:	February 16, 2009	
Activity Year	Labor Budget	Non-Labor Budget
2011	365 hours	\$1,500
2012	365 hours	\$1,500
2013	365 hours	\$1,500
2014	365 hours	\$1,500
2015	365 hours	\$1,500
Total 5-Year Cost	1,825 hours	\$7,500

Has BMP been accomplished? YES

S5.C.3.

Illicit Discharge Detection & Elimination Permit Requirements

The SWMP shall include an ongoing program to detect and remove illicit connections, discharges as defined in 40 CFR 122.26(b)(2), and improper disposal, including any spills not under the purview of another responding authority, into the municipal separate storm sewers owned or operated by the Permittee. Permittees shall fully implement an ongoing illicit discharge detection and elimination program no later than 180 days prior to the expiration date of this Permit.

The minimum performance measures are:

S5.C.3.a.

A municipal storm sewer system map shall be developed no later than four years from the effective date of this permit. Municipal storm sewer system maps shall be periodically updated and shall include the following information:

S5.C.3.a.i.

The location of all known municipal separate storm sewer outfalls and receiving waters and structural stormwater BMPs owned, operated, or maintained by the Permittee. Each Permittee shall map the attributes listed below for all storm sewer outfalls with a 24 inch nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems:

- *Tributary conveyances (indicate type, material, and size where known).*
- *Associated drainage areas.*
- *Land use.*

S5.C.3.a.ii.

Each Permittee shall initiate a program to develop and maintain a map of all connections to the municipal separate storm sewer authorized or allowed by the Permittee after the effective date of this Permit.

S5.C.3.a.iii.

Geographic areas served by the Permittee's MS4 that do not discharge stormwater to surface waters.

S5.C.3.a.iv.

Each Permittee shall make available to Ecology, upon request, municipal storm sewer system map(s) depicting the information required in S5.C.3.a.i. through iv above.

S5.C.3.b.

Each Permittee shall develop and implement an ordinance or other regulatory mechanism to effectively prohibit non-stormwater, illegal discharges, and/or dumping into the Permittee's municipal separate storm sewer system to the maximum extent allowable under State and Federal law. The ordinance or other regulatory mechanism shall be adopted no later than 30 months from the effective date of the Permit.

S5.C.3.b.i.

The regulatory mechanism does not need to prohibit the following categories of non-stormwater discharges:

- *Diverted stream flows.*
- *Rising ground waters.*
- *Uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(20)).*
- *Uncontaminated pumped groundwater.*
- *Foundation drains.*
- *Air conditioning condensation.*
- *Irrigation water from agricultural sources that is commingled with urban stormwater.*
- *Springs.*
- *Water from crawl space pumps.*
- *Footing drains.*
- *Flows from riparian habitats and wetlands.*
- *Non-stormwater discharges covered by another NPDES permit.*
- *Discharges from emergency fire fighting activities in accordance with S2 Authorized Discharges.*

S5.C.3.b.ii.

The regulatory mechanism shall prohibit the following categories of non-stormwater discharges unless the stated conditions are met:

- *Discharges from potable water sources, including water line flushing, hyper-chlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be dechlorinated to a concentration of 0.1 ppm or less, pH-adjusted, if necessary, and volumetrically and velocity controlled to prevent re-suspension of sediments in the MS4.*
- *Discharges from lawn watering and other irrigation runoff. These shall be minimized through, at a minimum, public education activities and water conservation efforts.*
- *Dechlorinated swimming pool discharges. The discharges shall be dechlorinated to a concentration of 0.1 ppm or less, pH-adjusted and reoxygenized if necessary, volumetrically and velocity controlled to prevent re-suspension of sediments in the MS4. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.*
- *Street and sidewalk wash water, water used to control dust, and routine external building wash down that does not use detergents. The Permittee shall reduce these discharges through, at a minimum, public education activities and/or water conservation efforts. To avoid washing pollutants into the MS4, Permittees must minimize the amount of street wash and dust control*

water used. At active construction sites, street sweeping must be performed prior to washing the street.

- *Other non-stormwater discharges. The discharges shall be in compliance with the requirements of the stormwater pollution prevention plan reviewed by the Permittee, which addresses control of construction site de-watering discharges.*

S5.C.3.b.iii.

The Permittee's SWMP shall, at a minimum, address each category in ii above in accordance with the conditions stated therein.

S5.C.3.b.iv.

The SWMP shall further address any category of discharges in i or ii above if the discharges are identified as significant sources of pollutants to waters of the State.

S5.C.3.b.v.

The ordinance or other regulatory mechanism shall include escalating enforcement procedures and actions.

S5.C.3.b.vi.

The Permittee shall develop an enforcement strategy and implement the enforcement provisions of the ordinance or other regulatory mechanism.

S5.C.3.c.

Each Permittee shall develop and implement an ongoing program to detect and address non-stormwater discharges, spills, illicit connections and illegal dumping into the Permittee's municipal separate storm sewer system. The program shall be fully implemented no later than 180 days prior to the expiration date of this Permit and shall include:

S5.C.3.c.i.

Procedures for locating priority areas likely to have illicit discharges, including at a minimum: evaluating land uses and associated business/industrial activities present; areas where complaints have been registered in the past; and areas with storage of large quantities of materials that could result in spills.

S5.C.3.c.ii.

Field assessment activities, including visual inspection of priority outfalls identified in I, above, during dry weather and for the purposes of verifying outfall location, identifying previously unknown outfalls, and detecting illicit discharges.

- *Receiving waters shall be prioritized for visual inspection no later than three years from the effective date of this Permit, with field assessments of three high priority water bodies made no later than four years from the effective date of this Permit. Field assessments on at least one high priority water body shall be made each year thereafter.*

- *Screening for illicit connections shall be conducted using: Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, (October 2004, or another methodology of comparable effectiveness.*

S5.C.3.c.iii.

Procedures for characterizing the nature of, and potential public or environmental threat posed by, any illicit discharges found by or reported to the Permittee. Procedures shall include detailed instructions for evaluating whether the discharge must be immediately contained and steps to be taken for containment of the discharge. Compliance with this provision shall be achieved by investigating (or referring to the appropriate agency) within 7 days, non average, any complaints, reports or monitoring information that indicates a potential illicit discharge, spill, or illegal dumping; and immediately investigating (or referring) problems and violations determined to be emergencies or otherwise judged to be urgent or severe.

S5.C.3.c.iv.

Procedures for tracing the source of an illicit discharge; including visual inspections, and when necessary, opening manholes, using mobile cameras, collecting and analyzing water samples, and/or other detailed inspection procedures.

S5.C.3.c.v.

Procedures for removing the source of the discharge; including notification of appropriate authorities; notification of the property owner; technical assistance for eliminating the discharge; follow-up inspection; and escalating enforcement and legal actions if the discharge is not eliminated.

Compliance with this provision shall be achieved by initiating an investigation within 21 days of a report or discovery of a suspected illicit connection to determine the source of the connection, the nature and volume of discharge through the connection, and the party responsible for the connection. Upon confirmation of the illicit nature of a storm drain connection, termination of the connection shall be verified within 180 days, using enforcement authority as needed.

S5.C.3.d.

Permittees shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

S5.C.3.d.i.

No later than 180 days prior to the expiration date of this Permit, distribute appropriate information to target audiences identified pursuant to S5.C.1.

S5.C.3.d.ii.

No later than two years from the effective date of this Permit, publicly list and publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges. Keep a record of calls

received and follow-up actions taken in accordance with S5.C.3.c.ii. through v. above; include a summary in the annual report.

S5.C.3.e.

Permittees shall adopt and implement procedures for program evaluation and assessment, including tracking the number and type of spills or illicit discharges identified; inspections made; and any feedback received from public education efforts. A summary of this information shall be included in the Permittee's annual report.

S5.C.3.f.

Each Permittee will provide appropriate training for municipal field staff on the identification and reporting of illicit discharges into MS4s.

S5.C.3.f.i.

No later than thirty months after the effective date of this Permit, each Permittee shall ensure that all municipal field staff who are responsible for identification, investigation, termination, cleanup, and reporting illicit discharges, including spills, improper disposal and illicit connections are trained to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques or requirements. Permittees shall document and maintain records of the training provided and the staff trained.

S5.C.3.f.ii.

No later than three years after the effective date of this Permit, an ongoing training program shall be developed and implemented for all municipal field staff, which, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system shall be trained on the identification of an illicit discharge/connection, and on the proper procedures for reporting and responding to the illicit discharge/connection. Follow-up training shall be provided as needed to address changes in procedures, techniques or requirements. Permittees shall document and maintain records of the training provided and the staff trained.

Illicit Discharge Detection & Elimination Program Summary

Storm System Map

The City of Tumwater has developed a comprehensive map of the public stormwater system, as well as a facility location map for private stormwater systems. These maps, which are maintained by the City's Mapping Manager, are updated as necessary following the completion of new projects or updates of existing pipe systems.

The development community (public) is involved through the development and submittal of as-built engineering documents for private construction projects, which staff incorporates into the City's stormwater map.

The current stormwater infrastructure map is reviewed and refined on a continual basis, and is periodically updated to include the following information:

- The location of all known city-owned storm sewer outfalls and receiving waters.
- Structural stormwater BMPs owned, operated, or maintained by the City.
- For all storm sewer outfalls with a 24-inch diameter or larger, or an equivalent cross-sectional area for non-pipe systems: (a) Tributary conveyances (indicate type, material, and size where known), (b) Associated drainage areas, and (c) Land use.
- All connections to the municipal separate storm sewer authorized or allowed by the Permittee after February 16, 2007.
- Geographic areas served by the City that do not discharge stormwater to surface waters.

Illicit Discharge Ordinance

The City of Tumwater Ordinance # 2009-018 was adopted in February, 2010. The goal of the revised rule, which replaced the City's previous stormwater-related Ordinance, adopted in 1986, was to provide an enforcement mechanism that effectively prohibits non-stormwater, illegal discharges, and/or dumping into the City's storm sewer system to the maximum extent allowable under State and Federal law. The IDDE ordinance includes escalating enforcement procedures and actions.

The ordinance provides exemptions for the following categories of non-stormwater discharges:

- Diverted stream flows.
- Rising ground waters.
- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)).
- Uncontaminated pumped ground water.
- Foundation drains.
- Air conditioning condensation.
- Irrigation water from agricultural sources that is commingled with urban stormwater.
- Springs.

- Water from crawl space pumps.
- Footing drains.
- Flows from riparian habitats and wetlands.
- Non-stormwater discharges covered by another NPDES permit.
- Discharges from emergency fire fighting activities in accordance with S2 Authorized Discharges.

The City's ordinance prohibits the following categories of non-stormwater discharges, unless the stated conditions are met:

- Discharges from potable water sources, including water line flushing, hyper-chlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a concentration of 0.1 ppm or less, pH-adjusted, if necessary, and volumetrically and velocity controlled to prevent re-suspension of sediments in the MS4.
- Discharges from lawn watering and other irrigation runoff. These shall be minimized through, at a minimum, public education activities (see section S5.C.1) and water conservation efforts.
- Dechlorinated swimming pool discharges. The discharges shall be dechlorinated to a concentration of 0.1 ppm or less, pH-adjusted and re-oxygenized if necessary, volumetrically and velocity controlled to prevent re-suspension of sediments in the MS4. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.
- Street and sidewalk wash water, water used to control dust, and routine external building wash down that does not use detergents. The Permittee shall reduce these discharges through, at a minimum, public education activities (see section S5.C.1.) and/or water conservation efforts. To avoid washing pollutants into the MS4, Permittees must minimize the amount of street wash and dust control water used. At active construction sites, street sweeping must be performed prior to washing the street.
- Other non-stormwater discharges. The discharges shall be in compliance with the requirements of the stormwater pollution prevention plan reviewed by the Permittee, which addresses control of construction site de-watering discharges.

Illicit Discharge Detection and Elimination (IDDE) Program

The City developed and implemented an ongoing Illicit Discharge Detection and Elimination (IDDE) program to detect and address non-stormwater discharges, spills, illicit connections and illegal dumping into the City's storm system. The program was fully implemented during 2009, and includes:

- Procedures for prioritizing areas likely to have illicit discharges, including at a minimum: evaluating land uses and associated business/industrial activities present; areas where

complaints have been registered in the past; and areas with storage of large quantities of materials that could result in spills.

- Field assessment activities, including visual inspection of priority outfalls identified on City maps during dry weather and for the purposes of verifying outfall locations, identifying previously unknown outfalls, and detecting illicit discharges.
 - Receiving waters including the Deschutes River, Percival Creek, Fishtrap Creek and Blacklake Ditch are visually inspected annually. Screening for illicit connections is conducted using: Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004. The City maintains compliance with the NPDES permit by investigating (or referring to the appropriate agency) within 7 days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge, spill, or illegal dumping; and immediately investigating (or referring) problems and violations determined to be emergencies or otherwise judged to be urgent or severe.
- Procedures for tracing the source of an illicit discharge including visual inspections. When necessary, opening manholes, using mobile cameras, collecting and analyzing water samples, and/or other detailed inspection procedures to help identify potential sources.
- Procedures for removing the source of the discharge; including notification of appropriate authorities, notification of the property owner, technical assistance for eliminating the discharge, follow-up inspections, and escalating enforcement and legal actions if the discharge is not eliminated.
- Tracking of the IDDE program, including complaints received, follow-up actions and other pertinent data, is managed on ASIST stormwater tracking software and included in annual reporting.

IDDE Education

Water Resources and Operation staff periodically attend training regarding Illicit Discharge Detection and Elimination. The Center for Watershed Protection and the Environmental Protection Agency are also utilized for continuing education via webinars and educational literature. The training and education received are used to continually evaluate and improve the City's IDDE program components.

IDDE Reporting Hotline – 360-754-4150

The City maintains a 24 hour IDDE reporting hotline. The hotline is posted on the City website, and is intended as a resource for citizens who witness illegal dumping of pollutants that may enter the storm system, or contaminate local water bodies or groundwater aquifers. Upon receiving a report, on-duty or on-call staff are dispatched to the spill site, where it is either cleaned up or appropriate emergency response staff are contacted if necessary.

Staff Training

An ongoing training program was developed and implemented for all municipal field staff, who, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system. The Water Resources Department is responsible for developing and coordinating this training, which occurs on an annual basis. Proper procedures for reporting and responding to the illicit discharge/connection are included as part of this training.

Follow-up training is provided as needed to address changes in procedures, techniques or requirements. The City documents and maintains records of the training provided in the ASIST program tracking software.

Illicit Discharge Detection & Elimination Program		
Compliance Date:	August 16, 2009	
Activity Year	Labor Budget	Non-Labor Budget
2011	136 hours	\$4,000
2012	136 hours	\$4,000
2013	136 hours	\$4,000
2014	136 hours	\$4,000
2015	136 hours	\$4,000
Total 5-Year Cost	680 hours	\$20,000

Has BMP been accomplished? Yes

S5.C.4.

Controlling Runoff from New Development, Redevelopment and Construction Sites Permit Requirements

Each Permittee shall develop, implement, and enforce a program to reduce pollutants in stormwater runoff to a regulated small MS4 from new development, redevelopment and construction site activities. This program shall be applied to all sites that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale. The program shall apply to private and public development, including roads. The “Technical Thresholds” in Appendix 1 shall be applied to all sites 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale.

The minimum performance measures are:

S5.C.4.a.

The program shall include an ordinance or other enforceable mechanism that addresses runoff from new development, redevelopment, and construction site projects. Pursuant to S5.A.2., in adopting this ordinance or other regulatory mechanism, existing local requirements to apply stormwater controls at smaller sites, or at lower thresholds than required pursuant to S5.C.4., shall be retained. The ordinance or other enforceable mechanism shall be in place no later than thirty months from the effective date of this Permit. The ordinance or other enforceable mechanism shall include, at a minimum:

S5.C.4.a.i.

The Minimum Requirements, technical thresholds, and definitions in Appendix 1 or an equivalent approved by Ecology under the NPDES Phase I Municipal Stormwater Permit, for new development, redevelopment, and construction sites. Adjustment and variance criteria equivalent to those in Appendix 1 shall be included. More stringent requirements may be used, and/or certain requirements may be tailored to local circumstances through the use of basin plans or other similar water quality and quantity planning efforts. Such local requirements shall provide equal protection of receiving waters and equal levels of pollutant control to those provided in Appendix 1.

S5.C.4.a.ii.

A site planning process and BMP selection and design criteria that, when used to implement the minimum requirements in Appendix 1 (or equivalent approved by Ecology under the Phase I Permit) will protect water quality, reduce the discharge of pollutants to the maximum extent practicable and satisfy the State requirement under Chapter 90.48 RCW to apply all known, available and reasonable methods of prevention, control and treatment (AKART) prior to discharge. Permittees shall document how the criteria and requirements will protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and satisfy State AKART requirements. Permittees who choose to use the site planning process and BMP selection and design criteria in the 2005 Stormwater Management Manual

for Western Washington, or an equivalent manual approved by the Department under the Phase I Permit, may cite this choice as their sole documentation to meet this requirement.

S5.C.4.a.iii.

The legal authority, through the approval process for new development, to inspect private stormwater facilities that discharge to the Permittee's MS4.

S5.C.4.a.iv.

Provisions to allow non-structural preventive actions and source reduction approaches such as Low Impact Development Techniques (LID), measures to minimize the creation of impervious surfaces and measures to minimize the disturbance of native soils and vegetation. Provisions for LID should take into account site conditions, access and long term maintenance.

S5.C.4.a.v.

If the Permittee chooses to allow construction sites to apply the "Erosivity Waiver" in Appendix 1, Minimum Requirement #2, the ordinance or regulatory mechanism shall include appropriate, escalating enforcement sanctions for construction sites that provide notice to the Permittee of their intention to apply the waiver but do not meet the requirements (including timeframe restrictions, limits on activities that result in non-stormwater discharges, and implementation of appropriate BMPs to prevent violations of water quality standards) to qualify for the waiver.

S5.C.4.b.

The program shall include a permitting process with plan review, inspection and enforcement capability to meet the standards listed in (i) through (iv) below, for both private and public projects, using qualified personnel (as defined in Definition and Acronyms). At a minimum, this program shall be applied to all sites that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale. The process shall be in place no later than thirty months from the effective date of this Permit.

S5.C.4.b.i.

Except as provided in S5.C.4.b.vii. below, review of all stormwater site plans for proposed development activities.

S5.C.4.b.ii.

Except as provided in S5.C.4.b.vii. below, inspect, prior to clearing and construction, all known development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 Identifying Construction Site Sediment Transport Potential.

S5.C.4.b.iii.

Except as provided in S5.C.4.b.vii. below, inspect all known permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. Enforce as necessary based on the inspection.

S5.C.4.b.iv.

Inspect all permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater controls such as stormwater facilities and structural BMPs. Also, verify a maintenance plan is completed and responsibility for maintenance is assigned. Enforce as necessary based on the inspection.

S5.C.4.b.v.

Compliance with the inspection requirements in (ii), (iii) and (iv) above shall be determined by the presence and records of an established inspection program designed to inspect all sites and achieving at least 95% of scheduled inspections.

S5.C.4.b.vi.

An enforcement strategy shall be developed and implemented to respond to issues of non-compliance.

S5.C.4.b.vii.

If the Permittee chooses to allow construction sites to apply the "Erosivity Waiver" in Appendix 1, Minimum Requirement #2, the Permittee is not required to review the construction stormwater pollution prevention plans as part of the site plan review in (i) above, and is not required to perform the construction phase inspections identified in (ii) and (iii) above related to construction sites which are eligible for the erosivity waiver.

S5.C.4.c.

The program shall include provisions to verify adequate long-term operation and maintenance (O&M) of post-construction stormwater facilities and BMPs that are permitted and constructed pursuant to (b) above. These provisions shall be in place no later than thirty months from the effective date of this Permit and shall include:

S5.C.4.c.i.

Adoption of an ordinance or other enforceable mechanism that clearly identifies the party responsible for maintenance, requires inspection of facilities in accordance with the requirements in (ii) through (iv) below, and establishes enforcement procedures.

S5.C.4.c.ii.

Each Permittee shall establish maintenance standards that are as protective or more protective of facility function than those specified in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington. For facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.

1. *The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facilities required condition at all times between inspections. Exceeding the maintenance standard between the period of inspections is not a permit violation.*
2. *Unless there are circumstances beyond the Permittees control, when an inspection identifies an exceedence of the maintenance standard, maintenance shall be performed:*
 - *Within 1 year for wet pool facilities and retention/detention ponds.*
 - *Within 6 months for typical maintenance.*
 - *Within 9 months for maintenance requiring re-vegetation, and*
 - *Within 2 years for maintenance that requires capital construction of less than \$25,000.*

Circumstances beyond the permittees control include denial or delay of access by property owners, denial or delay of necessary permit approvals, and unexpected reallocations of maintenance staff to perform emergency work. For each exceedence of the required timeframe, the Permittee must document the circumstances and how they were beyond their control.

S5.C.4.c.iii.

Annual inspections of all stormwater treatment and flow control facilities (other than catch basins) permitted by the Permittee according to S5.C.4.b. unless there are maintenance records to justify a different frequency.

S5.C.4.c.iv.

Inspections of all new flow control and water quality treatment facilities, including catch basins, for new residential developments that are a part of a larger common plan of development or sale, every 6 months during the period of heaviest house construction (i.e., 1 to 2 years following subdivision approval) to identify maintenance needs and enforce compliance with maintenance standards as needed.

S5.C.4.d.

The program shall include a procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, and other enforcement records. Records of maintenance inspections and maintenance activities shall be maintained. Permittees shall keep records of all projects disturbing more than one acre, and all projects of any size that are part of a common plan of development or sale that is greater than one acre that are approved after the effective date of this Permit.

S5.C.4.e.

The program shall make available 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. Permittees will continue to enforce local ordinances controlling runoff from sites that are also covered by stormwater permits issued by Ecology.

S5.C.4.f.

No later than thirty months from the effective date of this Permit, each Permittee shall verify that all staff responsible for 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. Follow-up training shall be provided as needed to address changes in procedures, techniques or staffing. Permittees shall document and maintain records of the training provided and the staff trained.

Controlling Runoff from New Development, Redevelopment and Construction Sites Program Summary

Adoption of Drainage Design and Erosion Control Manual

The City of Tumwater adopted the 2010 Drainage Design and Erosion Control Manual (DDECM) in May, 2010. Ordinance 2010-003 is the legislative action that provided for the adoption of the manual. The current manual adopts minimum requirements, technical thresholds, and definitions for new development, redevelopment and construction site activities that are at least as stringent as those outlined in Appendix I of the NPDES permit. Prior to adoption of the 2010 DDECM, the requirements of the 2005 Department of Ecology Manual were utilized for development guidance.

The DDECM outlines a permitting process with plan review, inspection and enforcement capability to meet standards identified in the City's NPDES permit for both private and public projects. At a minimum, this program shall be applied to all sites that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale.

Provisions to verify adequate long-term operation and maintenance (O&M) of post-construction stormwater facilities and BMPs that are permitted and constructed pursuant to the above are also included within the DDECM.

Non-structural preventive actions and source reduction approaches such as Low Impact Development (LID) techniques, measures to minimize the creation of impervious surfaces and measures to minimize the disturbance of native soils and vegetation are also incorporated into the current DDECM. In considering LID techniques, factors such as site conditions, access and long term maintenance are evaluated.

The 2010 Drainage Design and Erosion Control Manual is available at the Public Works counter or can be accessed on the City's website, located at www.ci.tumwater.wa.us

Permitting Process

The City requires developers to implement the guidelines outlined in the DDECM adopted by the City. These requirements are enforced through regular site inspections by the Public Works and Community Development Departments. The City also requires all developments to undergo a site plan review process that identifies and addresses potential water quality impacts.

The City will continue to require the development community to comply with the standards outlined in the most current Drainage Manual and stormwater protection ordinance. Staff will also continue with regular, unannounced site visits to ensure compliance with the standards.

The program includes a permitting process with plan review, inspection and enforcement capability to meet the standards listed below, for both private and public projects. At a minimum, this program applies to all sites that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale. At a minimum, the inspection and enforcement procedures include the following components:

- Staff inspects, prior to clearing and construction, all known development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 Identifying Construction Site Sediment Transport Potential.
- Staff inspects all known permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. Staff shall enforce as necessary based on the inspection and in doing so, will utilize the enforcement procedures adopted in Ordinance #O2009-018.
- Staff inspects all permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater controls such as stormwater facilities and structural BMPs. Also, staff shall verify a maintenance plan is completed and responsibility for maintenance is assigned.
- Compliance with the inspection requirements above shall be determined by the presence and records of an established inspection program designed to inspect all sites and achieving at least 95% of scheduled inspections. Inspection and recordkeeping activities regarding construction activities are recorded using the City's Eden software program.

Stormwater Ordinance

The City of Tumwater has two ordinances that serve as guidance for the stormwater management program. As stated previously, the DDECM was adopted by ordinance #2010-003 and addresses construction site sediment and erosion control. The City enforces the standards set forth in the DDECM as part of the development review process. In addition, the City adopted Ordinance #2009-018, which more specifically addresses illicit discharges, some of which may be the result of development practices.

Ordinance #2009-018 outlines additional enforcement actions that may be utilized to prevent offsite discharges, including those associated with construction sites.

The ordinance includes:

Provisions to verify adequate long-term operation and maintenance (O&M) of post-construction stormwater facilities and BMPs that are permitted and constructed such as:

- Maintenance requirements by system owners.
- The requirement for maintenance agreements for privately maintained stormwater facilities.
- Procedures for acceptance of existing stormwater facilities.
- Enforcement procedures that may be utilized to ensure compliance.

Inspection Program

Ordinance #2009-018 also grants the authority and outlines the procedures for City inspection of privately maintained stormwater facilities and establishes maintenance standards that are as protective or more protective of facility function than those specified in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington.

All privately owned stormwater facilities will be inspected by City personnel on an annual basis, unless a lighter schedule is justified. Inspection records, including correspondence with the persons responsible for the maintenance will, at a minimum, be recorded in the ASIST stormwater tracking database. The following records will be maintained:

- Inspection reports
- Warning letters
- Notices of violation
- Other enforcement records

In cases where maintenance records justify less frequent inspections, privately owned facilities may be inspected on a bi-annual basis.

Inspections of all new flow control and water quality treatment facilities, including catch basins, for new residential developments that are a part of a larger common plan of development or sale, are conducted every 6 months during the period of heaviest house construction (i.e., 1 to 2 years following subdivision approval) to identify maintenance needs and enforce compliance with maintenance standards as needed.

Notice of Intent (NOI) for Construction/Industrial Activity

As part of the Development permitting process, prospective developers are issued copies of the “Notice of Intent for Construction Activity”, or the “Notice of Intent for Industrial Activity”, depending upon which NOI applies to their development project.

Construction Site Runoff – Employee Training

The City verifies that all staff responsible for 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. Follow-up training is provided as needed to address changes in procedures, techniques or staffing. The City shall document and maintain records of the training provided and the staff trained in the ASIST Stormwater program.

Controlling Runoff from New Development, Redevelopment and Construction

Compliance Date: August 16, 2009

Activity Year	Labor Budget	Non-Labor Budget
2011	640 hours	\$8,000
2012	640 hours	\$8,000
2013	640 hours	\$8,000
2014	640 hours	\$8,000
2015	640 hours	\$8,000
Total 5-Year Cost	3,200 hours	\$40,000

Has BMP been accomplished? Yes

S5.C.5.

Pollution Prevention and Operation and Maintenance for Municipal Operation Permit Requirements

Within three years of the effective date of this Permit, each Permittee shall develop and 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.

The minimum performance measures are:

S5.C.5.a.

Each Permittee shall establish maintenance standards that are as protective, or more protective, of facility function than those specified in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington. For facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.

S5.C.5.a.i.

The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facilities required condition at all times between inspections and/or maintenance is not a permit violation.

S5.C.5.a.ii.

Unless there are circumstances beyond the Permittees control, when an inspection identifies an exceedence of the maintenance standard, maintenance shall be performed:

- *Within 1 year for wet pool facilities and retention/detention ponds.*
- *Within 6 months for typical maintenance.*
- *Within 9 months for maintenance requiring re-vegetation.*
- *Within 2 years for maintenance that requires capital construction of less than \$25,000.*

Circumstances beyond the permittees control include denial or delay of access by property owners, denial or delay of necessary permit approvals, and unexpected reallocations of maintenance staff to perform emergency work. For each exceedence of the required timeframe, the Permittee shall document the circumstances and how they were beyond their control.

S5.C.5.b.

Annual inspection of all municipally owned or operated permanent stormwater treatment and flow control facilities, other than catch basins, and taking appropriate maintenance actions in accordance with the adopted maintenance standards. The annual inspection requirement may be reduced based on inspection records.

Reducing the inspection frequency shall be based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records, the Permittee may substitute written statements to document a specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with G19 Certification and Signature.

S5.C.5.c.

Spot checks of potentially damaged permanent treatment and flow control facilities (other than catch basins) after major (greater than 24-hour-10-year recurrence interval rainfall) storm events. If spot checks indicate widespread damage/maintenance needs, inspect all stormwater treatment and flow control facilities that may be affected. Conduct repairs or take appropriate maintenance actions in accordance with maintenance standards established above, based on the results of the inspections.

S5.C.5.d.

Inspection of all catch basins and inlets owned or operated by the Permittee at least once before the end of the Permit term. Clean catch basins if the inspection indicates cleaning is needed to comply with maintenance standards established in the 2005 Stormwater Management Manual for Western Washington. Decant water shall be disposed of in accordance with Appendix 6 Street Waste Disposal.

Inspections may be conducted on a "circuit basis" whereby a sampling of catch basins and inlets within each circuit is inspected to identify maintenance needs. Include in the sampling an inspection of the catch basin immediately upstream of any system outfall. Clean all catch basins within a given circuit at one time if the inspection sampling indicates cleaning is needed to comply with maintenance standards established under S5.C.4.c., above.

As an alternative to inspecting catch basins on a "circuit basis," the Permittee may inspect all catch basins, and clean only catch basins where cleaning is needed to comply with maintenance standards.

S5.C.5.e.

Compliance with the inspection requirements in a,b,c and d above shall be determined by the presence of an established inspection program designed to inspect all sites and achieving inspection of 95% of all sites.

S5.C.5.f.

Establishment and implementation of practices to reduce stormwater impacts associated with runoff from streets, parking lots, roads or highways owned or maintained by the Permittee, and road maintenance activities conducted by the Permittee. The following activities shall be addressed:

- *Pipe cleaning*
- *Cleaning of culverts that convey stormwater in ditch systems*
- *Ditch maintenance*
- *Street cleaning*
- *Road repair and resurfacing, including pavement grinding*

- *Snow and ice control*
- *Utility installation*
- *Pavement striping maintenance*
- *Maintaining roadside areas, including vegetation management*
- *Dust control*

S5.C.5.g.

Establishment and implementation of policies and procedures to reduce pollutants in discharges from all lands owned or maintained by the Permittee and subject to this Permit, including but not limited to: parks, open space, road right-of-way, maintenance yards, and stormwater treatment and flow control facilities. These policies and procedures shall address, but are not limited to:

- *Application of fertilizer, pesticides, and herbicides including the development of nutrient management and integrated pest management plans.*
- *Sediment and erosion control.*
- *Landscape maintenance and vegetation disposal.*
- *Trash management.*
- *Building exterior cleaning and maintenance.*

S5.C.5.h.

Develop and implement an on-going training program for employees of the Permittee whose construction, operations or maintenance job functions may impact stormwater quality. The training program shall address the importance of protecting water quality, the requirements of the Permit, 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, including potential illicit discharges. Follow-up training shall be provided as needed to address changes in procedures, techniques or requirements. Permittees shall document and maintain records of training provided.

S5.C.5.i.

Development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this Permit that are not required to have coverage under the Industrial Stormwater General Permit. Implementation of non-structural BMPs shall begin immediately after the pollution prevention plan is developed. A schedule for implementation of structural BMPs shall be included in the SWPPP. Generic SWPPPs that can be applied at multiple sites may be used to comply with this requirement. The SWPPP shall include periodic visual observation of discharges from the facility to evaluate the effectiveness of the BMP.

S5.C.5.j.

Records of inspections and maintenance or repair activities conducted by the Permittee shall be maintained in accordance with S9 Reporting Requirements.

Pollution Prevention and Operation and Maintenance for Municipal Operation Program Summary

Maintenance Standard Development

With adoption of the 2010 DDECM, the City of Tumwater adopted maintenance standards for both public and private stormwater facilities that are as protective, or more protective, of facility function than those specified in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington.

The purpose of the standards is to determine when maintenance is necessary for a given facility and guidance on the performance of the necessary maintenance. The maintenance standard is not a measure of the facilities required condition at all times between inspections. Exceeding the maintenance standard between inspections and/or maintenance is not a permit violation, but every attempt is made to insure that maintenance standards are maintained to the greatest degree possible.

Unless there are circumstances beyond the City's control, when inspection identifies an exceedence of the maintenance standard, maintenance shall be performed per the following schedule:

- Within one year for wet pool facilities and retention/detention ponds.
- Within six months for typical/regular maintenance.
- Within nine months for maintenance requiring re-vegetation.
- Within two years for maintenance requiring capital construction of less than \$25,000.

Circumstances beyond the City's control include denial or delay of access by property owners, denial or delay of necessary permit approvals, and unexpected reallocations of maintenance staff to perform emergency work. For each exceedence of the required timeframe, the City will document the circumstances and how they were beyond control.

Annual Stormwater Facility Inspections

The City of Tumwater maintains an ongoing inspection program for City-owned stormwater infrastructure. This program entails the following:

1. Annual inspection of all municipally-owned stormwater treatment and flow control facilities, other than catch basins, and taking appropriate maintenance actions in accordance with the 2010 DDECM. The annual inspection requirement may be reduced based on inspection records.

* Reducing the inspection frequency shall be based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records, the City may substitute written statements to document a specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with NPDES Permit G19 Certification and Signature.

2. Spot checks of potentially damaged permanent treatment and flow control facilities (other than catch basins) after major (greater than 24-hour-10-year recurrence interval rainfall) storm events. If spot checks indicate widespread damage/maintenance needs, inspect all stormwater treatment and flow control facilities that may be affected. Conduct repairs or take appropriate maintenance action in accordance with maintenance standards established above, based on the results of the inspections.

3. Inspection of all catch basins and inlets owned or operated by the City at least once before February 16, 2012. Clean catch basins if the inspection indicates cleaning is needed to comply with maintenance standards established in the 2010 DDECM. Decant water shall be disposed of in accordance with Appendix 6 Street Waste Disposal.

* Inspections may be conducted on a "circuit basis" whereby a sampling of catch basins and inlets within each circuit is inspected to identify maintenance needs. Include in the sampling an inspection of the catch basin immediately upstream of any system outfall. Clean all catch basins within a given circuit at one time if the inspection sampling indicates cleaning is needed to comply with maintenance standards.

* As an alternative to inspecting catch basins on a "circuit basis," the City may inspect all catch basins, and clean only catch basins where cleaning is needed to comply with maintenance standards.

4. Compliance with the inspection requirements above shall be determined by the presence of an established inspection program designed to inspect all sites and achieving inspection of 95% of all sites.

Stormwater Pollution Prevention Practices

Through adoption of the 2010 DDECM, the City established practices to reduce stormwater impacts associated with runoff from streets, parking lots, roads or highways owned or maintained by the City and road maintenance activities conducted by the City. The following activities were addressed through the adopted BMPs:

- Pipe cleaning
- Cleaning of culverts that convey stormwater in ditch systems
- Ditch maintenance
- Street cleaning
- Road repair and resurfacing, including pavement grinding
- Snow and ice control
- Utility installation
- Pavement striping maintenance
- Maintaining roadside areas, including vegetation management
- Dust control

The City also established BMPs to reduce pollutants in discharges from all lands owned or maintained by the City, including but not limited to: parks, open space, road right-of-way, maintenance yards, and stormwater treatment and flow control facilities.

These policies and procedures address:

- Application of fertilizer, pesticides, and herbicides including the development of nutrient management and integrated pest management plans.
- Sediment and erosion control.
- Landscape maintenance and vegetation disposal.
- Trash management.
- Building exterior cleaning and maintenance.

Employee Training

The City provides an on-going training program for employees whose construction, operations or maintenance job functions may impact stormwater quality. The City will also continue to provide general education to City employees on the proper handling, storage, and disposal of hazardous materials through direct contact and use of various media, including flyers, brochures and/or crew seminars.

Training programs shall address the importance of protecting water quality, the requirements of the City's NPDES permit, operation and maintenance standards, inspection procedures, BMP selection, ways to perform job activities to prevent or minimize impacts to water quality and procedures for reporting water quality concerns, including potential illicit discharges.

Follow-up training will be provided as needed to address changes in procedures, techniques or requirements.

All training activities shall be documented for compliance with the NPDES permit.

Pollution Prevention Plan (SWPPP)

The City maintains a Stormwater Pollution Prevention Plan (SWPPP) for the Operations and Maintenance Facility. The SWPPP is included as an Appendix to this document. The SWPPP identifies potential sources of stormwater pollution and the Best Management Practices that will be undertaken to minimize pollution risks and meet the requirements of the NPDES permit. The SWPPP includes an implementation plan and identification of the personnel responsible for implementing the BMPs.

All staff operating from facilities covered by the SWPPP shall be trained on the proper use of the plan, as well as BMPs identified within the plan.

Municipal O&M and Pollution Prevention BMPs		
Compliance Date: February 16, 2010		
Activity Year	Labor Budget	Non-Labor Budget
2011	130 hours	\$ 3,750
2012	130 hours	\$ 3,750
2013	130 hours	\$3,750
2014	130 hours	\$3,750
2015	130 hours	\$3,750
5-Year Cost	650 hours	\$18,750

Has BMP been accomplished? Yes

S8. Monitoring

S8.A.

Permittees are not required to conduct water sampling or other testing during the effective term of this Permit, with the following exceptions:

S8.A.1.

Any water quality monitoring required for compliance with TMDLs, pursuant to section S7 Compliance with Total Maximum Daily Load Requirements and Appendix 2 of this Permit, and

S8.A.2.

Any sampling or testing required for characterization illicit discharges pursuant to section S5.C.3. or S6.D.3. of this Permit.

S8.B.

The Permittee shall provide the following information in each annual report:

S8.B.1.

A description of any stormwater monitoring or studies conducted by the Permittee during the reporting period. If stormwater monitoring was conducted on behalf of the Permittee, or if studies or investigations conducted by other entities were reported to the Permittee, a brief description of the type

of information gathered or received shall be included in the annual report(s) covering the time period(s) the information was received.

S8.B.2.

An assessment of the appropriateness of the BMPs identified by the Permittee for each component of the SWMP; and any changes made, or anticipated to be made, to the BMPs that were previously selected to implement the SWMP, and why.

S8.B.3.

Information required pursuant to S8.C.2. below.

S8.C.

Preparation for future, long-term monitoring. This section does not apply to secondary permittees. However, secondary permittees are required to provide information, maps and access for sampling efforts, as necessary. Secondary permittees are encouraged to participate in the monitoring program.

S8.C.1.

All cities, towns and counties shall prepare to participate in the implementation of a comprehensive long-term monitoring program. The monitoring program will include two components: stormwater monitoring and targeted Stormwater Management Program (SWMP) effectiveness monitoring. Stormwater monitoring is intended to characterize stormwater runoff quantity and quality at a limited number of locations in a manner that allows analysis of loadings and changes in conditions over time and generalization across the permittees' jurisdictions. Stormwater program effectiveness monitoring is intended to improve stormwater management efforts by evaluating issues that significantly affect the success of, or confidence in, stormwater controls. The monitoring program can include long-term monitoring and short-term studies. The results of the monitoring program will be used to support the adaptive management process and lead to refinements of the SWMP.

S8.C.1.a.

Stormwater monitoring. Cities having a population greater than 10,000 and counties having a population greater than 25,000 shall identify sites for long-term stormwater monitoring. Adequate sites will be those completely mapped as required in S5.C.3.a. and be suitable for permanent installation and operation of flow-weighted composite sampling equipment. No later than December 31, 2010:

S8.C.1.a.i.

Each county having a population greater than 100,000 shall identify three outfalls or conveyances where stormwater sampling could be conducted. One outfall or conveyance shall represent commercial land use, the second shall represent low-density residential land use and the third will represent medium-to-high density residential land use.

S8.C.1.a.ii.

Each city having a population greater than 75,000 shall identify three outfalls or conveyances where stormwater sampling could be conducted. One outfall or conveyance shall represent commercial land use, the second shall represent high-density residential land use and the third will represent industrial land use.

S8.C.1.a.iii.

Each county having a population between 25,000 and 100,000 shall identify two outfalls or conveyances where stormwater sampling could be conducted. One outfall shall represent commercial land use and the second one will represent low-density residential land use.

S8.C.1.a.iv.

Each city having a population between 10,000 and 75,000 shall identify two outfalls or conveyances where stormwater sampling could be conducted. One outfall shall represent commercial land use and the second will represent high-density residential land use.

S8.C.1.a.v.

Permittees shall document how sites are selected and justify the basin size, based on comparison of the times of concentration with rainfall durations for typical seasonal storms. Each site shall represent a discernible type of land use, but not be a single industrial or commercial complex. Ideally, to represent a particular land use, no less than 80% of the area served by the outfall or conveyance will be classified as having that land use. Permittees may move upstream in the conveyance system to achieve the desired land use, or, if a primarily industrial or commercial area is not present, an area of mixed industrial and commercial land use may be selected.

S8.C.1.b.

SWMP effectiveness monitoring.

S8.C.1.b.i.

Each city, town and county shall prepare to conduct monitoring to determine the effectiveness of the Permittee's SWMP at controlling stormwater-related problems that are directly addressed by actions in the SWMP. This component of the monitoring program shall be designed to answer the following types of questions:

- How effective is a targeted action or narrow suite of actions?*
- Is the SWMP achieving a targeted environmental outcome?*

S8.C.1.b.ii.

No later than December 31, 2010, each city, town and county shall identify at least two suitable questions and select sites where monitoring will be conducted. This monitoring shall include, at a minimum, plans for stormwater, sediment or receiving water monitoring of physical, chemical and/or biological characteristics. This monitoring may also include data collection and analysis of other measures of program effectiveness, problem identification and characterizing discharges for planning purposes.

S8.C.1.b.iii.

For each question, the Permittee shall develop a monitoring plan containing the following elements:

- *A statement of the question, an explanation of how and why the issue is significant to the Permittee, and a discussion of whether and how the results of the monitoring may be significant to other MS4s.*
- *A specific hypothesis about the issue or management actions that will be tested.*
- *Specific parameters or attributes to be measured.*
- *Expected modifications to management actions depending on the outcome of hypothesis testing.*

S8.C.2.

Monitoring program reporting requirements.

S8.C.2.a.

The fourth annual report shall:

S8.C.2.a.i.

Describe the status of identification of sites for stormwater monitoring, if required for the Permittee.

S8.C.2.a.ii.

Include a summary of proposed questions for the SWMP effectiveness monitoring and describe the status of developing the monitoring plan, including the proposed purpose, design, and methods.

S8.C.2.b.

To comply with the requirements of all or part(s) of this section, permittees in a single Urbanized Area or WRIA may choose to submit a collaborative report or reports in lieu of separate reports.

Monitoring

Stormwater Monitoring

The intent of the stormwater monitoring program is to characterize stormwater runoff quantity and quality at a limited number of locations in a manner that allows analysis of loadings and changes in conditions over time and generalization across the City's jurisdictions.

The City of Tumwater's population fall between the NPDES Permit threshold of 10,000 to 75,000, thereby mandating the need for the identification of two outfalls or conveyances where stormwater sampling could be conducted. As per permit requirements, the first outfall shall represent commercial land use and the second will represent high-density residential land use.

The drainage basin chosen to represent the commercial land use outfall is the Capitol Boulevard basin that outfalls at "M" Street, otherwise known as the (CM) basin. This basin was selected due to its broad range of commercial land uses and streetscapes. In addition, the basin has an outfall that is situated in an area that will be practical for long-term monitoring. It is anticipated that this basin will provide a good representation of stormwater runoff in similar areas within the jurisdiction.

Desoto Canyon (DC) was chosen to represent the outfall that best generalizes stormwater from a residential land use. In addition to having an outfall that is in a location that can readily be monitored, the drainage area is significant in size and is nearly 100% residential in nature.

Stormwater Management Program Effectiveness Monitoring

Stormwater program effectiveness monitoring is intended to improve stormwater management efforts by evaluating issues that significantly affect the success of, or confidence in, stormwater controls. The result of SWMP effectiveness monitoring is to support the adaptive management process and lead to refinements of the SWMP.

In selecting the two required sites for SWMP monitoring, staff time and funding was also a consideration. It was determined that the two sites chosen for the Stormwater Monitoring Program would also serve as good locations for assessing BMP effectiveness. To this end, Department Ecology staff was contacted and verified that the Capitol Boulevard at "M" Street (CM), and the Desoto Canyon (DC) outfalls could also be used for SWMP Effectiveness Monitoring.

Section S8.C.1.b.ii of the NPDES Permit mandates that the City shall identify two suitable questions regarding the SWMP BMPs that may be answered by the SWMP effectiveness monitoring. The two questions that have been identified at this time, along with program hypotheses are:

Question #1 Are the yard care messages presented by the City of Tumwater Education and Outreach Program having a beneficial effect on nitrate levels?

Hypothesis #1 Yard care messages presented through a variety of media significantly reduce nitrate levels.

Question #2 Are regular inspections and associated regulations of commercial sites having a beneficial impact on reducing the amount of oil and grease entering the Deschutes River?

Hypothesis #2 Regular inspections of stormwater treatment facilities, along with incorporation of appropriate BMPs and enforcement action, will result in a reduction of oil and grease entering the Deschutes River.

For the purposes of answering these questions, both baseline and ambient monitoring of the associated outfalls will occur. Although Oil and Grease levels have been collected at the "M" Street outfall, additional baseline data will need to be collected. In addition, baseline nitrate samples will need to be collected at the Desoto Canyon outfall.

Once baseline data is collected, quarterly outfall monitoring will be conducted and the resulting data will be recorded. Constituent levels can then be graphed over time to determine potential reductions in contaminant levels.

Outcomes of the selected monitoring can then be used to either deliver the programmatic elements of the posed questions over a broader scale or, conversely, re-evaluate our educational and inspection programs.