



City of Tukwila

2011 Update

Stormwater Management Program

(SWMP)

Prepared By

City of Tukwila
Public Works Department

Permit #WAR04-5544

City of Tukwila

Stormwater Management Program

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1. INTRODUCTION

The National Pollutant Discharge Elimination System (NPDES) permit program is a requirement of the federal Clean Water Act. The federal Environmental Protection Agency (EPA) has delegated permit authority to state environmental agencies. In Washington, the NPDES delegated permit authority is the Washington State Department of Ecology (DOE). The City must comply with the Phase II Municipal Stormwater Permit.

This document was prepared by the City of Tukwila to meet the requirements for a Stormwater Management Program (SWMP) as required by the NPDES Phase II Permit issued by the DOE. The SWMP was developed to outline the reduction of pollutant discharges from the City's Municipal Separate Storm Sewer System (MS4).

The Permit allows discharge of stormwater runoff from municipal drainage systems into the state's water bodies (i.e., streams, rivers, lakes, wetlands, etc.) as long as municipalities implement programs to protect water quality by reducing the discharge of "non-point source" pollutants to the "maximum extent practicable" (MEP). In addition, the City must meet "all known and reasonable treatment" (AKART) through application of Permit specified "best management practices" (BMPs). The practices specified in the Permit are collectively referred to as the SWMP and grouped under the following program 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 Operation and Maintenance for Municipal Operations

The Permit requires that the City report annually (by March 31 of each year) on the SWMP implementation from the prior year. The Permit also requires submittal of documentation that describes proposed program activities for the coming year. As of December 31, 2010, the City met the initial Permit requirements.

2. NPDES PHASE II PROGRAM COMPONENTS

Tukwila is defined as a Phase II community by the Washington State Department of Ecology and, therefore, is required to comply with the requirements of the Phase II National Pollution Discharge Elimination System Stormwater (NPDES) Permit. Phase II communities are those that:

- Own and operate a storm drain system
- Discharge to surface waters of the state
- Are located in urbanized areas
- Have a population of more than 1,000

Phase II communities were required to complete a NPDES Phase II Stormwater Permit Application and submit to the DOE by March 10, 2003. The NPDES Phase II Permit was issued to Tukwila on January 17, 2007 and went into effect on February 16, 2007. The Permit was modified on June 17, 2009 and expires on February 15, 2012.

As stated, the major program components listed in the Permit are as follows:

- 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 Operation and Maintenance for Municipal Operations

The following sections describe each of the program components and how the City is currently addressing each requirement and the City's future planned activities. In general, the City of Tukwila is currently performing all required NPDES Phase II Permit activities and has programs in place to address future requirements.

2.1 PUBLIC EDUCATION AND OUTREACH

2.1.1 Permit Requirements

Section S5.C.1 of the Phase II permit requires that the City provide an educational and outreach program for the area served by its MS4 no later than 2/15/2009. The purpose of this program is to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts. The educational program will target audiences including: the general public, businesses, industries, elected officials, policy makers, planning staff, engineers, maintenance staff, and other City employees. Records of public education and outreach activities including measurements of understanding and adoption of targeted behaviors need to be tracked and maintained throughout the Permit's duration.

2.1.2 Current Activities

The City currently has an active public educational and outreach program that uses a variety of approaches to inform residents and businesses about stormwater related pollution-prevention activities. The City uses many resources for educational information such as DOE's Hazardous Waste and Toxics Reduction Program, Environmental Protection Agency's Region 10 Pacific Northwest, King County's Department of Natural Resources and Parks, Water Resource Inventory Area 9, and local environmental organizations. The City's current educational activities consist of the following:

1. Water Course Signing

The City has placed and maintains signs at all stream crossings to educate pedestrians and motorists of the location of local streams. Signs read "This Stream Is In Your Care".

2. Catch Basin Labeling

- All new public or private catch basins are required by City standards to be labeled with a torch down pavement decal stating "Dump No Waste - Drains to Stream".
- All paving projects, both private and public, that pave around an existing catch basin are required to label all catch basins with a torch down pavement decal stating "Dump No Waste - Drains To Stream".
- All inlet castings are required by City standards to be labeled "Outfall to Stream - Dump No Pollutants".

3. City Newsletter Article

The City of Tukwila publishes a newsletter 5 times a year and includes articles concerning stormwater related topics at least 4 times a year. Typical topics covered include:

- Car Washing
- Illegal dumping of materials in storm drains
- Landscape chemicals
- Proper disposal and methods of reducing household hazardous wastes

4. Water Quality Brochures

The Public Works Department has brochures and handout materials available and on display that include the following topics:

- Spill Kit Pilot Program, Stormwater Education for Businesses
- Puget Sound Shoreline Stewardship Guidebook
- Disposing of Hazardous Wastes Information Card
- Hazardous Waste Directory
- Ecology - Shoptalk, Spills-Who Do You Call?
- Antifreeze Recycling
- EPA's Information Sheet Regarding Oil/Water Separators
- Automotive and the Do It Yourselfer
- Puget Sound Shoreline Stewardship Guidebook
- Ecology – Five Steps to Natural Yard Care

- Pet Waste Brochures that specifically address Stormwater Pollution Prevention
5. User Surveys
The City conducts annual surveys to targeted audience that measured the public's understanding of surface water related topics. Information obtained from the survey will be used to guide future education and outreach programs.
 6. Regional Outreach
Participate in the King County's regional outreach forum, STORM, on an ongoing basis to share ideas on public education efforts.

2.1.3 Planned Activities

The City will continue all current public education and outreach activities listed above and will add the following activities in 2011:

1. Additional Water Quality Brochures that become available
2. Offer Environmental Stewardship Training
3. Tukwila Reporter (new for 2011) will be used to publish stormwater articles
4. Provide Residential Recycling Collection Event
5. Distribute King County Drainage Maintenance Standards for Commercial and Multi-Family Drainage Facilities
6. Initiate development of an Elementary School Education Series
7. Conduct a Stormwater Community Survey (required annually)
8. Car Wash Activities will be directed to the Multi-Family Residences (for example, apartment and condominium properties)
9. Installation of metal storm drain markers at catch basin locations

2.2 PUBLIC INVOLVEMENT AND PARTICIPATION

2.2.1 Permit Requirements

This program component requires that the City include ongoing opportunities for public involvement through advisory councils, committees, and participation in developing rate structures and environmental activities. In addition, the public will have opportunities to aid in the development of the City's SWMP annual report(s) and other submittals.

2.2.2 Current Activities

The City has several ongoing public involvement and participation activities that compliment and work with the City's public education and outreach activities. These activities include the following:

1. City Website
The City makes available all required permit submittals as well as stormwater planning documents for public information and comment. Posted information includes:

- General NPDES Information
 - Annual NPDES Reports
 - Annual SWMP Updates
 - City Infrastructure Design and Construction Standards
 - Surface Water Studies
 - Illicit Discharge Contact Information
 - Council and Committee Agenda
 - City News Articles
2. Public Meetings
- The City uses the following public meetings for all contracts, required submittals, programs, and budgets related to NPDES:
- City Council
 - Committee of the Whole
 - Utilities Committee

2.2.3 Planned Activities

The City will continue all current public involvement and participation activities listed above. The City will update all required NPDES information including the 2011 SWMP and 2010 Annual Report on its website (www.ci.tukwila.wa.us/pubwks/npdes.html) by March 31 of each year. Any other submittals required by the Permit will also be posted as necessary on the website. In addition to these current activities, the City will add the following activities:

1. The City will offer Environmental Stewardship Training. This program element will provide training for citizens who want to learn how to care for wetlands, streams, and buffers.
2. The City will provide an opportunity for a Hands-On Environmental Stewardship Work Party. This work party will consist of City and other community volunteers that will work to complete a small stream buffer restoration project.
3. Continue with the Pet Waste Program and invite dog owners to participate in the publication of brochures.
4. Conduct a Stormwater Community Survey with other Phase II Communities.

2.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

2.3.1 Permit Activities

The City is required to implement an ongoing program to detect and remove illicit connections, discharges, and improper disposal, including any spills not under the purview of another responding authority, into the MS4 owned or operated by the City. The goals and requirements of the program are as follows:

- Develop a municipal storm sewer system map that includes information on the City's MS4 (for example, outfalls, receiving waters, connection points, and areas that don't discharge to surface water, etc.).
- Effectively prohibit, through ordinance or other regulatory mechanism, non-stormwater, illegal discharges, and dumping into the City's MS4, including locating priority areas likely to have illicit discharges.
- Develop and implement a program to detect and address non-stormwater discharges, spills, illicit connections, and illegal dumping into the City's MS4.
- Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper waste disposal.
- Implement procedures for program evaluation and assessment which includes a program to track spills and illicit discharges (both number and type), record inspections made and any feedback received from public education effort.
- Provide appropriate training to City employees on IDDE into the City's MS4.
- Establish a hotline number for public reporting of spills and other illicit discharges. Maintain a record of all calls received and actions taken.

2.3.2 Current Activities

The City currently has several of the elements required for an IDDE program in place and others will be developed as required. Current activities include the following:

1. Outfall Mapping

The City began a geographic information system (GIS) mapping program in 2003 that has mapped approximately 90% of the City. All receiving water body outfalls have been mapped. The City has funding in place to complete mapping by the required permit deadline of 2/15/2011. This program includes mapping all public surface water pipes 8" and larger and obtaining system information such as pipe invert, condition, and material. All GIS information is then added to the City's GIS Database and is available for staff use. The information is also provided upon request to the public.

2. Reporting Hotline

The City has an advertised reporting phone number, (206) 433-1860, where illegal dumping and spills can be reported.

3. Training Program

The City has an ongoing training program that consisted of the following activities:

- Staff training was conducted on June 29, 2010 for 14 employees, which consisted of Parks and Golf maintenance field supervisors, technicians and specialists.
- Staff training was conducted on November 17, 2010 for 4 employees, which consisted of Development Engineers and a Construction Inspector.

4. Video Inspection
The City's Surface Water Maintenance's inspection program is divided into four zones. Video equipment is used to inspect storm water piping in these zones. This 2010 reporting period consisted of condition based video inspections. Illegal pipe connections and questionable discharges are investigated and corrective measures are taken when warranted.
5. Car Wash Program
As part of the City's ongoing public education program, a SudSafe Car Wash program is in place. All organized charity car washing events must use this program. In addition, facilities without a commercial wash base are allowed the use of a sudsafe car wash kit providing the discharge is limited to the sanitary sewer.
6. Spill Response Kit
The City has a Spill Response Kit Program that targets potentially polluting activities within the commercial and industrial areas of the City.
7. IDDE Ordinance
The City adopted a new IDDE Ordinance on 2/16/2010 that fully complied with NPDES Permit requirements.
8. Implementation of an Industrial and Commercial Inspection Program that targets businesses with potential pollutant activities.

2.3.3 Planned Activities

The City will continue all current IDDE activities listed above. In addition to these activities, the City will implement the following activities in 2011:

1. Outfall Mapping
The City will complete Area 7 of our GIS mapping program.
2. Monitoring
Continue with monitoring the prioritized Receiving Waters. These are three outfalls, one within the Green River and two within the Duwamish River, for visual inspection and for potential future testing. The characteristics of the outfalls are:
 - Strander Blvd – This outfall drains a portion of the Tukwila Urban Center which is a highly developed commercial center. The discharge area contains primarily office and retail businesses as well as City storm drainage.
 - Duwamish Neighborhood – This outfall drains the Duwamish neighborhood which is primarily made up of single family residences and City roadways. The area is an older neighborhood and surface waters are discharged directly into the Duwamish River without treatment.

- South 104th Outfall – This outfall drains industrial facilities along a portion of East Marginal Way South. Surface waters are discharged into the Duwamish River without treatment.
3. **Training Program**
The City will continue with a staff training program that will consist of the following activities:
 - Staff training for all new employees and any additional field personnel missed during the last training session.
 - Staff training for new techniques and procedures as they become known.
 4. **Reporting Spill Hotline**
The City will continue to evaluate the existing spill hotline procedure to determine if this method is working as intended and modify the procedure if necessary.
 5. The City started an industrial and commercial inspection program in late 2009. This program will continue to be developed and implemented.
 6. Car wash activities will be directed to the multi-family residences (apartment rental properties).

2.4 CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT, AND CONSTRUCTION SITES

2.4.1 Permit Requirements

The Phase II Permit requires that the City develop, implement, and enforce a program to reduce pollutants in stormwater runoff to its MS4 from any new development, redevelopment, and construction site activities that result in a land disturbance of greater than or equal to one acre including projects less than one acre that are part of a larger common plan of the development or sale. The minimum elements included in this program are:

- An ordinance or other regulatory mechanism to address runoff from new development, redevelopment, and construction site projects. City codes, ordinances, and development specifications may require smaller sites to comply with these requirements as well.
- Develop and implement a permit process with plan review, inspection, and enforcement capability including adequate long-term operation and maintenance of the stormwater facilities and infrastructure.
- Develop and implement procedures for documenting inspections and enforcement actions.
- Make available copies of the *Notice of Intent for Construction Activity* and *Notice of Intent for Industrial Activity* for representatives of new developments and redevelopments.

- Develop and implement a training program for staff responsible for implementing the program to control stormwater runoff from new development, redevelopment and construction sites including permitting, plan review, construction site inspection, and enforcement.

2.4.2 Current Activities

The City has an active program to reduce pollutants in stormwater runoff from new development, redevelopment, and construction site activities. The existing program applies to both public and private projects, including roads. The current compliance activities associated with the above permit requirements are summarized below:

- The City amended city codes and revised standards to meet permit requirements for development, redevelopment, construction and post-construction stormwater management, including escalating enforcement provisions for illicit discharge originating from construction sites. The development related codes became effective February 15, 2010 which are included in Ordinances 2274 and 2275.

In summary, for the purpose of development and redevelopment the City follows the listed items:

1. **Design Standards**
The City uses the minimum design standards of the 2009 King County Surface Water Design Manual with an option to use DOE's Surface Water Management Manual for Western Washington.
2. **Construction Site Inspection**
All sites are inspected by the City prior to the start of construction. The City tracks and maintains inspection records and enforcement actions by staff.
3. **Construction Standards**
City's Infrastructure Design and Construction Standards, and WSDOT Standard Specifications for Road, Bridge, and Municipal Construction are used for construction standards.
4. **Enforcement**
TMC 8.45 provides for a system of escalating enforcement procedures necessary to sustain the existing codes and standards throughout the construction and development process.
5. **Notice of Intent**
The City provides Notice of Intent for Construction Activity and Notice of Intent for Industrial Activity to representatives of proposed new development or redevelopment projects.

6. Long-term operation and maintenance of stormwater control facilities is provided by ordinance whereby maintenance responsibility, standards and inspection procedures are addressed.
7. Runoff-control from project sites that require a Department of Ecology stormwater permit is also subject to City runoff-control requirements.
8. Appropriate staff members are CESCL-certified (Construction Site Erosion and Sediment Control).

2.4.3 Planned Activities

1. Continuing with construction site visits and creating an open forum for:
 - Discussing types of pollution-prevention techniques
 - Educating project personnel of impacts of pollution
2. Continue to improve Controlling Runoff by refining the following elements:
 - Procedures
 - Techniques
 - Information Management
3. Continue staff training as necessary.
4. Continue to develop an education and maintenance follow-up program for private storm drainage facilities approved prior to the current NPDES Phase II permit.

2.5 POLLUTION PREVENTION AND OPERATION AND MAINTENANCE FOR MUNICIPAL OPERATIONS

2.5.1 Permit Requirements

This minimum control measure requires that the City provide a pollution prevention and operation and maintenance program including a training component that has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. All elements of the operations and maintenance program were required to be in place by February 16, 2010. The minimum elements included in this program component are:

1. Establishment of maintenance standards that are as protective, or more protective, of facility functions than those specified in Chapter 4 of Volume V of the 2005 Stormwater Management Manual for Western Washington. The purpose of the maintenance standards is to determine if maintenance is required on a particular facility or structure. If maintenance is deemed necessary during inspection, the following schedule is required for completion of the required maintenance:
 - Within 6 months for typical maintenance
 - Within 9 months for maintenance requiring re-vegetation
 - Within 1 year for wet pool facilities and retention/detention pond
 - Within 2 years for maintenance that requires capital construction of less than \$25,000.

2. Develop and implement an operations and maintenance (O&M) program with the ultimate goal of preventing or reducing pollutant runoff from municipal separate stormwater system and municipal operations and maintenance activities.
3. Perform required inspections of stormwater facilities on a regular basis. Inspections will be documented with the work needed or completed on the stormwater facilities according to the Permit requirements for reporting.
4. Develop and implement a program to reduce the stormwater impacts from streets, parking lots, roads, highways, and other lands owned, operated or maintained by the City, including road maintenance.
5. Develop and implement a training program for City employees whose job functions may impact stormwater quality.
6. Develop a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance yards and material storage facilities owned or operated by the City that is not required to have coverage under the Industrial Stormwater General Permit.

2.5.2 Current Activities

The City has an active pollution prevention and operation and maintenance program implemented by the City's Surface Water Maintenance Division. This program includes the following activities:

1. **Catch Basin Inspection**
The City inspects all catch basins and inlets owned and operated by the City at least once before the end of the permit term (minimum 5-year rotating schedule). If the catch basin has over 6 inches of deposited sediment in the sump, it will be cleaned.
2. **Conveyance System Inspection/Cleaning**
The City's piped storm drainage system has been delineated into zones by the Public Works staff. Pipe system maintenance is scheduled by zone, and each zone is maintained on a 3 to 5-year cycle. This includes repair of all pipes and catch basins, with particular attention given to chronic problem areas and areas for which complaints have been received from citizens.
3. **Flow/Water Quality Facilities**
The City inspects all surface water flow control and water quality facilities on an annual basis. Maintenance is performed as needed and includes vegetative control, structure repair, and sediment removal. Maintenance is performed at least once every 10 years, or as needed through the current circuit or condition based inspection and compliant process.

4. **Drainage Complaints**
The City responds to all stormwater-related complaints. Complaints are submitted to the City through Requests for Action (RFAs), Environmental Report Tracking System (ERTS), City Council meetings, letters, e-mails, and telephone calls. These complaints are forwarded to the appropriate division and/or to the respective property owner/project site.
5. **Problem Areas**
Maintenance staff keeps an informal list of problem areas occurring in the City's ditch system. These problem areas are maintained every 3 to 5 years.
6. **Video Inspection**
The City maintains an annual closed circuit television (CCTV) inspection schedule of its existing pipeline system to help identify illegal connections to drainage systems, damaged, and obstructed sections of pipe. This information is used to schedule repairs and further investigate illicit discharges and connections.
7. **Hazardous Material Spills**
Tukwila Fire Department responds to hazardous material spills. Though City maintenance crews are often the first group to respond to spill complaints, they are limited to the use of absorbent pillows and oil absorbing particulate materials.

2.5.3 Planned Activities

The City will continue with all programs and procedures currently in place. In addition to these, the City will conduct the following activities in 2011:

1. **Procedural Review**
 - The City will continue to review and revise, when necessary, all current practices that reduce impacts from runoff or maintenance activities associated with municipally owned or operated streets, parking lots, and roads.
 - The City will continue to develop and implement a more formalized plan for inspection and documentation of all catch basins, inlets, stormwater treatment, and flow control facilities owned and operated by the City. The plan will include performing spot checks on potentially damaged permanent treatment and flow control facilities after major storm events.
 - The City will continue to review and revise, as necessary, the current SWPPP.
2. The City will continue with the current training program for existing and new employees as needed and as new information and techniques become available.

2.6 MONITORING

2.6.1 Permit Requirements

Permittees are required to prepare for the implementation of a comprehensive long-term monitoring program under the next permit term. The program includes two components: stormwater monitoring and targeted SWMP effectiveness monitoring.

The Permittees are not required to conduct water quality sampling or other testing during this permit term, with the following exceptions:

- Water quality monitoring required for compliance with TMDLs (Total Maximum Daily Pollutant Loads).
- Any sampling or testing required for characterizing illicit discharges pursuant to the Illicit Discharge Detection and Elimination section of the permit.

2.6.2 Current Activities

The City currently has several of the elements required for a monitoring program in place and others will be developed as required. Current activities include the following:

1. A TMDL has not been established for the City of Tukwila, so monitoring is not required at this time. The Department of Ecology is currently conducting TMDL analysis of the lower Duwamish River.
2. Outfalls
The City has developed and maintains a map of all MS4 outfalls as part of our GIS mapping program and will continue to be developed.
3. The City has prioritized three receiving waters for visual inspections.
4. The Department of Ecology is assessing Phase I Permittees monitoring plans. Upon completion of assessment, Ecology will provide the guidance needed for the Phase II Permittees to develop their long term monitoring plans.

2.6.3 Planned Activities

The City will continue with all programs and procedures currently in place. In addition, the City will conduct the following activities in 2011:

1. Monitoring Plan
 - Conduct field assessment on at least one high priority water body.
 - Continue to participate in the regional, state, and local monitoring forums to develop and integrate monitoring and assessment requirements.
 - Prepare to develop a long-term monitoring plan once the Department of Ecology provides further guidance.

3. CONCLUSION

This Surface Water Management Program has been prepared to demonstrate compliance with the requirements of the NPDES Phase II Permit and outline planned activities for 2011. This SWMP will be a working document until the final plan is to be completed by August 19, 2011.

There are multiple tasks that the City is undertaking to align itself with the Permit requirements and the many elements that need to be accomplished and built upon.

The Public Education and Outreach Program has been implemented and exciting opportunities exist to be even more creative in developing a program that reaches out with useful information that will benefit the general public, business district, and industrial community.

The City has an ongoing Illicit Discharge Detection and Elimination Program in place and will continue to update it with staff training, enforcement of the IDDE ordinance, and distribute additional educational materials.

With the knowledge base that the City has in place, controlling runoff from new development, redevelopment, and construction sites will now be more manageable.

With the use of various SWPPP's and the 2009 King County Surface Water Design Manual, the City has a program in place that meets its obligation of pollution prevention for municipal operations.

Additional information on the City's NPDES program can be found online at <http://www.ci.tukwila.wa.us/pubwks/npdes.html>.

The public is encouraged to participate in the development of the SWMP. Please contact the Public Works Department with questions, comments, or ideas.

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