



City of Windsor Heights

Revised Stormwater Program Report January 2005 – October 2009

**NPDES Phase II MS4 General Permit
City of Windsor Heights, IA: Permit Number 77-91-0-01**

EXECUTIVE SUMMARY

The City of Windsor Heights was issued an NPDES stormwater MS-4 permit from the Iowa Department of Natural Resources in 2005. This report summarizes progress made towards permit compliance during the first five years of the first permit cycle of the city's program which continues to expand and develop. This report also uses many acronyms which may be unfamiliar to the reader, so an appendix of acronyms and terms is included. As required, the city addresses the following six minimum storm water control measures:

1. Public education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-construction Stormwater Management
6. Pollution Prevention and Good Housekeeping

To accomplish all of these requirements, the City has made stormwater expenditures of:
\$40,377 in FY 2006;
\$114,021 in FY 2007 (including improvements to College Avenue area);
\$40,967 in FY 2008; and
\$193,487 in FY 2009 (including creek dredging project south of Buffalo Bridge.)

The City has a budget of \$99,297 in FY 2010 and a proposed budget of \$123,890 in FY 2011 for stormwater activities. Following is a summary of the City of Windsor Heights NPDES Phase II MS4 permit requirements and progress made on each control measure for the period of January 2005 through October 2009.

PUBLIC EDUCATION AND OUTREACH

GOAL: The goal of the city program is to educate numerous target audiences using various tools. Informational content includes storm water impact on water quality and measures that can be implemented to reduce water quality degradation.

The city is a member of the Iowa Storm Water Education Program (ISWEP) and uses numerous educational resources built around quarterly topics. In addition, ISWEP supported efforts at the 2008 and 2009 Iowa Water Festival held each year at the Des Moines Area Community College in Ankeny. Storm water tattoos and educational information were provided to up to 1,500 5th graders from across the state.

The City published a storm water article in several monthly newsletters. Each article is in reference to the appropriate season. The City will insert monthly articles for the duration of the permit.

Stormwater Intake Marking: 50 Intake Storm Water markers have been designed and ordered and were to be installed in December 2009. Due to the weather conditions markers will be installed in 2010 when the weather breaks. All intakes labeled will be recorded and kept on file of location and date label was installed and man hours spent on installation.

Following are examples of Public Outreach Articles:

| Resource | Target Audience | # Distributed or # of Events and Attendees |
|---------------------|-----------------|---|
| Brochures | General Public | Available at City Hall |
| Newsletter articles | Residents | Inserted into newsletters December, 2009 “ Winter Maintenance” August, 2009 “Stormwater Advisory Committee” March, 2009 “Your Waterfront Property” February, 2008 “Civics Corner Q&A” January, 2008 “Water and Storm Water Infrastructure” April, 2007 “\$\$\$ for City Improvements” April, 2006 – Brush Waste Information September, 2006 “College Avenue Bridge Closing” July, 2005 “Attention: Lead Based Paint” January, 2005 “Stormwater Billing Explained” |

PUBLIC INVOLVEMENT AND PARTICIPATION

GOAL: The goal of the public involvement and participation module is to increase awareness and provide a variety of awareness opportunities for the general public and school children. The goal is also to involve volunteers in carrying the stormwater message and enhancing the City’s overall stormwater program.

Stormwater Advisory Committee

The Stormwater Advisory Committee has met in December 10, 2009 to develop an outreach strategy for the community. The Stormwater Advisory Committee will meet again on January 28, 2010 to discuss the RFQ for adopting a new Watershed Assessment Program. Also the 2010 spring projects for stormwater. Minutes and attendance will be kept on file for future inspections.

Committee Members include: Linda Bacon, Rollie Bramhall, Darren Fife, Diane Ross, Betty Glover, Michelle Heater, Mel Hrubetz, Susan Jones, John Konior, Dennis O’Brien, Louise Moon, Trish Schneider, Don Steele, and Kathleen Witkovski.

Educational Program for school curriculum

Cowles Montessori School in Windsor Heights has a storm water curriculum for lower and upper grades where students learn about water cycle and the effects on environment and benefits to society. The Stormwater Committee intends to contact the school to help provide the school with material as seasons change in 2010. The Stormwater Committee will also contact Clive Elementary School.

Public Survey There has been a storm water survey developed that will be available to all residents on the City's website which is www.windsorheights.org in the Public Works section where residents can complete survey and City can determine what percent of knowledge residents have on storm water. Percentages will be available by July 2010.

ILLICIT DISCHARGE DETECTION AND ELIMINATION

GOAL: The goal of this module is to put policies in place and provide enforcement to detect and eliminate illicit discharge.

Illicit Discharge Prohibition Ordinance

The Illicit Discharge Ordinance was presented to the Windsor Heights City Council and became part of the Municipal Code October 15, 2007. The Municipal Code is available on the City's website at www.windsorheights.org.

Illicit Discharge Detection and Elimination Program

The City of Windsor Heights Public Works Department is responsible for implementing this program. Program schedule, checklist, and mapping will be developed. Records are kept for all program activities.

Annual dry weather flow inspections of outfalls which discharge to non-intermittent waterways or water bodies have been conducted by the City Inspector on November 11th, 2009. Fourteen outfalls were inspected and no illicit discharge was detected. All visual dry weather inspection field sheets are kept on file. A scheduled dry weather inspection program is in place for 2010 where inspections will be executed and documented for future reference. The program shall also include dry weather flow inspections of approximately 20% of all outfalls that discharge to Waters of the State that are intermittent waterways or water bodies with all of these outfalls being inspected during the duration of the permit.

A more formal illicit discharge program is being developed by the City Inspector and Public Works Director and Stormwater Advisory Committee and will be completed June, 2010. Once program is operational IDNR will be notified the program is in effect and City is in compliance as required by permit.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

GOAL: The goal of this module is to put policies in place and provide enforcement to control stormwater and prevent runoff from construction sites.

Construction Site Runoff Control Ordinance

The Construction Site Erosion and Sediment Control Ordinance was presented to the Windsor Heights City Council and passed October 15, 2007. The Municipal Code is available on the City's website at www.windsorheights.org.

Construction Site Review and Inspection Program

Dave Breese/City Inspector is designated for SWPPP review, inspection and enforcement activities for this program which includes residential, commercial and industrial developments and the city's construction projects. All construction sites are inspected after one half (1/2) inch or more of rainfall. A scheduled program is determined by rainfall amounts and time of year. A Construction Site Inspection Sheet has been developed for such sites and will be kept on file for duration of permit.

A city permit is issued with evidence of an NOI General Permit Number 2 and after the SWPPP has been reviewed and approved. Inspections are conducted as needed for compliance. The City has had a good response by permittees in bringing sites into compliance.

POST-CONSTRUCTION STORMWATER MANAGEMENT

GOAL: The goal of this module is to utilize and promote best management practices in handling and improving the quality of stormwater.

Post-Construction Runoff Control Policy Ordinance

The Post Construction Runoff Control Ordinance was presented to the Windsor Heights City Council and passed October 15, 2007. The Municipal Code is available on the City's website at www.windsorheights.org.

Inspection of Runoff Control Devices City Inspector visually inspects runoff control devices monthly and documents any improvements needed or repairs. Current Inspector has found past storm sewer inspection reports from past years of 1981 thru 1999.

Watershed Assessment Program

The City is developing a watershed assessment program and action plan to be used for the sub-watersheds. A land use/watershed action plan will be developed and implemented, and will include all of the permit required items in addition to specific watershed goals and action items. The City has currently drafted up a request for qualification for City Council to review on February 1, 2010.

Recent activities to protect and maintain the Walnut Creek Watershed include the creek dredging. In FY 2009, 8,200 cubic yards of material was removed from Walnut Creek, just south of the Buffalo Street Bridge. The cost to dredge the creek was \$135,786.

Best Management Practices

In 2005, the City Council adopted the Hickman Corridor Overlay District. This zoning overlay includes regulations that compel the use of BMP's for stormwater.

In 2006, the City made storm drainage improvements to College Avenue Bridge and upgraded stormwater infrastructure adjacent to the upper section of Walnut Creek.

Also in 2006, the City worked with school children from the Cowles Montessori School to design the architectural program for the Colby Park Playground. One segment of the design process was to review stormwater issues and identify how drainage and water quality could be addressed. A waterway theme was even incorporated into the design of the new playground. Following are pictures showing the playground (after a storm) before it was improved and after the area had been upgraded (in 2007).



In addition to undertaking playground improvements, the City worked to improve Colby Park. As part of the master plan, a bioswale was included to collect, slow and clean stormwater prior to its entry into Walnut Creek. The bioswale was built in 2008.



In addition to undertaking improvements adjacent to Walnut Creek, the City was using best management practices in other parts of the City. The City renovated and reconstructed Lions Park in 2007. Prior to redevelopment, Lions Park was awash with soil erosion and stormwater runoff problems. The park was then redeveloped as a rain garden. The park is located behind City Hall at 1133 66th Street.



POLLUTION PREVENTION/GOOD HOUSEKEEPING

GOAL: The goal of this module is to utilize and promote best management practices and implement policies that aid in the prevention of pollution.

Operation and Maintenance Program for MS4

The City Inspector and Public Works Department have responsibility for inspecting the MS4 components in accordance with the implementation schedule. A street sweeping program is in place that meets the requirements noted in the permit. Currently, the Public Works Director is developing a site map of municipal buildings and scheduled BMPs that will reduce the amount of pollutants and a planned procedure on proper clean up of pollutant findings. A SWPPP will be developed by City Inspector for such buildings once the site map is developed.

Pesticide and Fertilizer Management Program The City of Windsor Heights engaged a certified contractor for fertilizer application at City-owned locations in Fall, 2009. Quantity information is on file in the Public Works Director's office. The contractor is currently researching organic methods for future application to lower or remove nitrates. The City is currently designing a program to educate the public and public works on the harmful effects and the positive effects on pesticides and fertilizers and when to apply these chemicals. The City is also researching possible alternatives to replace current fertilizers in spring 2010 that will be less harmful on neighboring waterways, such as the potential for using organic materials as previously mentioned.

Training Program for Municipal Employees

City staff has been attending related seminars and conferences sponsored by sources such as IAMU, ISWEP. Staff will attend future continuing education programs as opportunities arise. Staff attended the following classes: Rainscaping, and Bioretention Cell Design. A training schedule is being designed to educate all municipal employees in 2010 to properly clean up pollutants and reduce any pollutants. This program will be in effect in the spring of 2010 and will be on a regular training schedule once a month for duration of permit. All training subjects will be on record along with attendance.

Best Management Practices-PP/GH

The City Inspector and the Public Works Director are assembling "spill kits" to be housed in City vehicles and at City facilities as part of the municipal employee education program. The kits will be available in the event of a hazardous materials spill and all employees will be well-versed and have the materials conveniently location to properly handle these types of incidents.

The City also conducts street sweeping and regular maintenance to stormwater intakes.

Once all current programs are developed and operational the City will contact IDNR that City is in compliance with permit and all records are available for IDNR inspections.

RECAP OF VARIOUS STORMWATER PROGRAM EXPENSES

The activities encompassed by the Stormwater Program are paid for by the Stormwater Utility. Following is a summary of some of the costs incurred during the time frame covered by this report.

| Program | Cost/Action |
|---|--|
| Education and Outreach | |
| ISWEP Membership | \$8,694 (2006, 2007, 2008, 2009) |
| Staff time | \$ 200 |
| Informational brochures | Available in City offices |
| Community newsletter articles | Numerous – see list under “Public Education and Outreach” |
| Newspaper articles | 9 |
| Storm drain labeling | \$600 for drain markers |
| Stormwater survey | \$200 |
| Educational program for schools | Playground development with Cowles School involved stormwater concerns. City staff worked with local school children to develop architectural program for the Colby Park Playground and addressed many design issues, including stormwater. \$3,000 |
| Public Involvement and Participation | |
| Storm Water Advisory Committee | Staff time \$150 (estimated for City staff time to develop article, advertise for committee members, assemble committee list and schedule for Council adoption) |
| Public Clean Ups | **There are public clean ups along Walnut Creek two times a year (spring, and fall). Each clean up consists of approximately 15 to 40 volunteers. They start at the north end of Windsor Heights and walk the trail down along creek and remove trash, which typically consist of approximately 40 bags of trash. The City provides trash bags and collects and properly disposes of the trash collected. City cost: \$325 |

| | |
|--|--|
| Illicit Discharge | |
| Illicit discharge ordinance | Adopted 10/15/2007 |
| Staff time | \$ 400 |
| Inspection/clean up costs | Staff time \$200 |
| Construction Site Program | |
| Construction site runoff control ordinance | Adopted 10/15/2007 |
| Staff time | \$ 400 |
| Construction site review and inspection program | \$ 600 |
| Post Construction Program | |
| Post-construction runoff control ordinance | Done |
| Staff time | \$ 3400 |
| Inspection of runoff control devices | \$ 200 |
| Watershed assessment program | Windsor Heights will a Watershed Assessment Program. A request for qualifications is scheduled for City Council February 1 2010. |
| Post-construction BMP manual | Staff time \$200 |
| Pollution Prevention and Good Housekeeping | |
| Street sweeping staff time, contractor expense | \$18,255/ All records on file with Public Works Director |
| Intake cleanout staff time | \$ 12,000/ All intakes inspected and cleanout after ½ inch or more of rainfall records on file with Public Works Director |
| Pesticide and fertilizer management program | \$ 800/ All fertilizer is done by outside contractor who is licensed in chemical application all records of applications are kept on file with Public Works Director |
| Employee training program | \$ 500/ Public Works crew chief Kevin Patterson is developing an employee training program in appropriate field techniques to reduce storm water pollutants. |
| | |
| City facilities BMPs program (a program to assess and implement BMPs to reduce pollutants in stormwater from these facilities) | Spent \$135,786 dredging Walnut Creek immediately south of Buffalo Bridge was dredged in FY 2009. The purpose of the dredging is to provide maintenance so that the creek flows as it is supposed to and to prevent flooding. Dredging as part of a regular maintenance program is scheduled and evaluated on a five-year basis. |
| Total | \$185,913 |

Appendix I: LIST OF COMMONLY USED ABBREVIATIONS

BMPs----- Best Management Practices
EPA----- Environmental Protection Agency
IDNR----- Iowa Department of Natural Resources
NOI----- Notice of Intent
NOV----- Notice of Violation
NPDES---- National Pollutant Discharge Elimination System
MS4----- Municipal Separate Storm Sewer System
SWPPP--- Stormwater Pollution Prevention Plan
CWA----- Clean Water Act