
# Stormwater Management Program

# Municipal Separate Storm Sewer System

# Texas Pollutant Discharge Elimination System Permit No. WQ0004396000

# Annual Report

# February 22, 2011 to September 30, 2012

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## CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed,

_____ _____

Jill A. Jordan, P.E. Date
Assistant City Manager
City of Dallas

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# STORMWATER MANAGEMENT PROGRAM OVERVIEW
# TPDES Permit No. WQ0004396000

**Introduction**

The City of Dallas (City) has prepared this Annual Report as required by Part IV.C (Annual Report) of Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004396000.

**Reporting Period**

This annual system-wide report summarizes program performance for the first Permit Year (PY1) of a five year MS4 permit issued to the City of Dallas on October 6, 2011. It also includes related performance metrics for the interim period between February 22, 2011 and September 30, 2011. The timeframe from February 22, 2011 to September 30, 2012 is referred to herein as the "Reporting Period".

**Report Format**

- This Annual Report is organized to provide a summary overview of the program highlights with a tabular summary of City of Dallas Stormwater Management Program (SWMP) performance relative to the measurable goals set forth in the SWMP. Consistent with IV.C of the Permit, the report sections are as follows:
- Section 1 - Status of Implementing the SWMP
- Section 2 - Summary of Proposed Changes to the SWMP
- Section 3 - Identification of Water Quality Improvements, Degradation and Progress Towards Measured Reduction of Pollutants
- Section 4 - Progress of Implementing the Interim Bacteria Reduction Plan (iBRP)
- Section 5 - Annual Expenditures for the Reporting Period
- Section 6 - Proposed Program Budget for the Following Permit Year
- Section 7 - Revisions to Assessment of Controls, or Budget from Previous Reporting Period
- Section 8 - A Summary of Permit Notifications Received
- Section 9 – A Summary of Industrial and Construction Site Inspections
- Section 10 – Summary of Representative Monitoring Data

**Reporting Period Highlights**

The City continues to meet the required permit milestones as outlined in the SWMP, with continuous improvements made to enhance permit and SWMP compliance. Program performance highlights during the Reporting Period for the 8 defined program minimum control measure, or "elements" are:

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| *MCM/Element 1* | *MS4 Maintenance Activities:* Ongoing operations and maintenance of the sumps, retention/detention basins, and stormwater interceptor structures. A total of **252,500** cubic yards of debris and floatables removed through these activities.<br>- Updated lake/pond inventory to include more than **180** ponds managed by City.<br>- Implemented several initiatives to address litter and floatables; **790** tons of litter removed through abatement activities |
| *MCM/Element 2* | *Post-Construction Stormwater Control Measures*: Continued implementation of integrated Stormwater Management Program (iSWM) that encourages post-construction controls to promote water quality improvements. Primary efforts included:<br>- Public/private task force to facilitate iSWM implementation<br>- Convened/Sponsored Regional LID Design Competition<br>- Developed Complete Streets design guidance |

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| | | - Developed standard details to support sustainable design<br>- Awarded EPA Green Infrastructure Grant to review Codes/Ordinances<br>- Implemented Code revisions to Development Code/Stormwater Code<br>- Implemented iSWM design for 5 projects and 2 Supplemental Environmental Projects<br>*Flood Control Projects:* Design continued on several key flood control projects to incorporate water quality improvement measures during the Reporting Period:<br>- Ricketts Branch Channel widened and deepened to alleviate flooding;<br>- Ledbetter Dike intake structure improvements;<br>- Pavaho West Sump, a 9.7 acre constructed wetlands pre-treatment cell (one of the four (4) wetland cells in the 60-acre Pavaho Wetlands Supplemental Environmental Project);<br>- The Trinity River Corridor Project: The Upper Chain of Wetlands, comprising three (3) new wetlands cells in 63 acres; The Corps and City continued installing about 3,000 new wetland plants within six wetland cells, totaling about 127 acres;<br>- The Zoo wetland Supplemental Environmental Project also advanced to final design and permitting. |
| **Reporting Period Highlights, (Continued)** | *MCM/Element 3* | *Illicit Discharge Detection and Elimination:* The City responded to and resolved **198** sanitary sewer overflows (SSOs) as a part of the Texas Commission on Environmental Quality (TCEQ) Sanitary Sewer Overflow Initiative. SSO prevention activities included televiewing over **235** miles of sewer, cleaning **1,792** miles of pipe, applying root control material to **73** miles of pipe, and performing **3,003** sanitary sewer repairs.<br>City staff investigated and resolved 317 illicit discharges from **4,515** dry weather inspections, and **2,035** related customer service requests. From these investigations, **186** illicit discharges were investigated; 2 were eliminated. Two Chapter 54 letters were sent to facilities with significant animal-waste related discharges and other Code violations.<br>The City collected over **1,725** tons of household hazardous waste in partnership with the Dallas County Household Chemical Collection Center (HC3). Over **32,6**28 households used this program; **48** percent of the participants were Dallas residents.<br>City staff responded to over **2,035** customer service requests related to stormwater concerns. The City's Illegal Dump Team monitored **63** chronic sites, investigated **920** cases, issued **818** citations, arrested **165** persons, and referred **224** locations for cleaning. The City addressed over **586** tons of improperly dumped waste including **5,026** tires.<br>The City conducted **4,515** outfall inspections, **30,692** inlet inspections, and **177** miles of cctv storm sewer inspections to verify system mapping. 24 new sstorm sewer systems with 3,063 new assets were added to the MS4 system map. |
| | *MCM/Element 4* | *Pollution Prevention /Good Housekeeping for Municipal Operations:* Participation in the City's Environmental Management System (EMS) continued; the City was re-certified for ISO 14001 in June, 2011. The City performed **189** internal environmental audits, **356** facility inspections, and **3** third-party external audits. Over **138** classes were provided to City staff concerning spill prevention and response related to municipal operations.<br>An estimated **52,500** tons of debris, floatables and other material were removed from the MS4 through the various City programs.<br>The draft integrated Pest Management Plan (IPM) was reviewed and work continued |

on draft IPM policy. The City also self-certified as a Class II Applicator under TPDES Pesticide General Permit No. 87000. West Nile Virus-related pesticide activities in July 2012 included spot treating **2.37** non-contiguous acres of water in **476** locations.

City staff responded to over **3,277** hazardous and **274** non-hazardous spill calls during the reporting period. Of the **679** incidents involving hydrocarbons, 12 entered the storm system. Discharges to the storm drain were mitigated by City staff, or contracted remediation response firms.

*Element 5*

*Industrial and High Risk Runoff:* The City performed **2,553** industrial inspections, including 139 inspections at **66** SARA 313 classified facility locations, and eight (8) permitted City facilities including landfills. Of **2,553** industrial inspections, 18 sites were transferred to Enforcement. City staff have been working with the operators on an ongoing basis to bring these sites into compliance.

During the reporting period, the City received **435** "No Exposure" certificates and received monitoring data from **126** facilities. As a result of evaluating these data, **30** facilities that exceeded water quality parameters were directed to implement an action plan to reduce water quality discharge exceedence(s); 17 facilities were required to provide more frequent monitoring data. Over 1,080 facilities were screened to assess the need to be permitted; as a result, 98 new facilities were permitted.

The City also initiated annual inspection of the **30** Sector U facilities with the potential to discharge bacteria. **22** new permits were initiated as a result of these inspections.

**Reporting Period Highlights, (Continued)**

*Element 6*

*Construction Site Runoff:* City staff performed a total of **6,428** inspections at **355** large sites, **2,668** inspections at **340** small sites, and an additional **39** inspections at sites that were less than an acre in size in response to citizen requests. Of **9,096** construction inspections, 34 sites were transferred to Enforcement. City staff have been working with the operators on an ongoing basis to bring these sites into compliance.

**Eight** (**8**) Construction Outreach workshops were provided to **244** operators and other interested personnel; two permit workshops for construction near water (Section 404, Floodplain Permit and Construction Permit) were provided to **164** attendees.

The City conducted **114** onsite operator consultations and nine **(9)** tail-gate presentations for **256** new operators as a result of receiving Notice-of-Intents or Construction Site Notices to commence construction during the reporting period.

*Element 7*

*Public Education and Outreach/Public Involvement and Participation:* The City presented an integrated education program addressing several stormwater quality issues, including leaf blowers, used oil and toxic materials, pet waste, herbicides, pesticides and fertilizers, pool discharges, spill prevention and pollution prevention. The City provided more than **96** outreach events and presentations directly reaching over **130,395** people.

The City worked with Dallas ISD, Richardson ISD, local private schools, and the Dallas County Community College System to provide **48** presentations on stormwater pollution prevention to over **2,395** students.

Five (5) industrial/trade workshops were provided to reach a total of 195 operators and other interested personnel. Three school-facility workshops on illicit discharges were provided to 117 school personnel to support end-of-school facility maintenance activities.

Volunteer efforts included the TCEQ Texas Stream Team program that implemented citizen stream monitoring in twenty two (22) different watersheds, and marking over **383** storm drains.

Efforts aimed towards tourists and visitors included travelling exhibits as a part of the

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| | Texas Discovery Gardens, and Texas State Fair.<br>The multi-media campaign was targeted to a multi-generational, multi-cultural audience including electronic and print materials concerning stormwater pollution prevention messages were presented in English, Spanish, and Mandarin Chinese. |
| *Element 8* | *Monitoring, Evaluation and Reporting*: City staff sampled eight (8) watersheds during wet weather conditions to screen for pollutants during the reporting period. Staff collected **691** water and sediment samples in response to special water quality projects, customer service requests, and other investigations.<br>The City performed wet weather monitoring of the Headwaters of Turtle Creek and Turtle Creek- Trinity River watersheds as a part of the NCTCOG Regional Wet Weather Monitoring Program. The NCTCOG submitted these data to the TCEQ on February 26, 2012.<br>Rapid Bioassessment Protocol monitoring was performed in **22** watersheds to assess chemical, physical and biological stream conditions.<br>The City performed dry weather monitoring of **4,515** stormwater outfalls as a part of the illicit discharge detection activities in Element 3.<br>Water quality trends over the permit period show improvement for most measured parameters. |

**Reporting Period Highlights (Continued)**

Other notable program activities included:

- During the reporting period, the City participated in the Trinity River Authority of Texas (TRA), Clean Rivers Program by sampling three locations of the Main Stem of the Trinity River through Dallas.
- The City received a new TPDES Municipal Separate Storm Sewer System (MS4) permit on October 6, 2011, and revised the Draft Stormwater Management Plan (SWMP) to align with the new permit. Public input was solicited through four different large public events (like Dallas Home & Garden Show and EarthFest), placement in the downtown library, and on the SWM website. The SWMP was finalized on September 30, 2012, and is provided under separate cover.
- The City participated in the NCTCOG efforts to develop a regional Bacteria Implementation Plan (iPlan) to address bacteria in 17 water bodies across the Metroplex, and developed the Interim Bacteria Reduction Plan (iBRP) to incorporate the iPlan into the SWMP. A copy of the iBRP is provided under separate cover.
- The City implemented two large regional events designed to foster stewardship of the Trinity River, and related environmental educations. These events were the Margaret Hunt Bridge Opening in March, 2012 and the Reliant Wind Festival in May, 2012, that together attracted about 30,000 people.
- The City continued participating in regional efforts towards the development of Total Maximum Daily Loads (TMDL) implementation plans for polychlorinated bi-phenols in fish tissue.
- During the reporting period, **827** citations and **2,161** outside complaints were issued as enforcement actions against illegal dumpers, and non-compliant construction sites. Two Chapter 54 letters were issued to industrial facilities with significant Code violations including illicit discharges, and **165** arrests were made for illegal dumping.

The tables on the following pages summarize the SWMP performance relative to the measurable goals set forth in the SWMP, and provide the implementation status of each of the eight (8) defined SWMP elements. ***Throughout this reporting period, the City of Dallas Stormwater Management Program has generally met, and in many cases exceeded, the measurable goals as set forth in the SWMP and TPDES Permit No. WQ0004396000.***

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **A (1) Structural Controls** | | | |
| **A (1 ) a - Conveyance System Repair and Maintenance** | | | |
| ***Gravity Storm Sewer System Maintenance*** | | | |
| 1. Inspect underground gravity storm drainage piping through cctv televiewing. | Miles of pipe inspected | Permit Year (PY) 1 - PY5 | **177** miles of storm sewer inspected |
| 2. Record the damaged storm drain piping areas and schedule maintenance. | # of pipe areas scheduled for maintenance | PY1 - PY5 | **63** areas required repair |
| | # of repairs completed | PY1 - PY5 | **61** repairs completed; **2** repairs scheduled |
| 3. Remove debris from storm drain system. | Volume of debris removed in CY | PY1 - PY5 | **12,932** cubic yards of debris removed inlets, storm sewers, culverts, pressure storm sewers and street pump stations |
| 4. Investigate roadside ditches and culverts through service requests | # of ditch and culvert maintenance requests | PY1 - PY5 | **469** ditch and culvert maintenance requests received |
| 5. Repair and maintain City-owned roadway culverts | # number and type of roadway culverts repaired | PY1 - PY5 | **451** ditch and culvert repairs completed |
| | # of culvert replacements | PY1 - PY5 | No culverts required replacement during reporting period |
| | Volume of debris removed in CY | PY1 - PY5 | *Included in A.1.a.3 Storm Drain system debris removal* |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| ***Pressure Sewer System Maintenance*** | | | |
| 1. Inspect 6 pressure sewer systems including pump station & outfall at least twice per year | # of pressure sewer system inspections | PY1 - PY5 | **200** pressure sewer system inspections conducted |
| 2. Maintain pressure sewer system | # of maintenance activities performed | PY1 - PY5 | **191** repairs completed |
| | Volume of debris removed in CY | PY1 - PY5 | *Included in A.1.a.3 Storm Drain system debris removal* |
| 3. Inspect 9 street pump stations, including pump station & outfall at least twice per year | # of Street Pump Station inspections | PY1 - PY5 | **1,447** street pump station inspections conducted |
| 4. Maintain street pump stations | # of cleaning & repair activities performed | PY1 - PY5 | **302** cleaning or repairs completed |
| | Volume of debris removed in CY | PY1 - PY5 | *Included in A.1.a.3 Storm Drain system debris removal* |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **A (1) b - Water Quality Structures** | | | |
| ***Levee/Dallas Floodway Inspections & Maintenance*** | | | |
| 1. Maintain thirteen (13) identified sump areas by:<br>a) Visually inspecting each sump area, including pump stations and trash racks, at least twice a year; | Sump inspections performed | Permit Year (PY) 1 - PY5 | **490** sump inspections/ **384** pump stations conducted |
| b) Cleaning trash racks after rain events, as needed; | # of trash rack inspections/pump station | PY1 - PY5 | **1,713** pump station trash rack inspections |
| | Volume of debris removed from trash racks in CY | PY1 - PY5 | **3,508** cubic yards of debris removed |
| c) Cleaning the sumps by de-silting, removing litter and woody debris, mowing, managing vegetation to ensure access to structures, and excavating sediments, as needed. | # of maintenance activities per sump in CY | PY1 - PY5 | **45** sump cleaning<br>**51,729** cubic yards of debris removed |
| | Area cleared and types of vegetative management performed | PY1 - PY5 | **29,670** acres mowed |
| | Volume of materials removed during maintenance activities in CY | PY1 - PY5 | **251,847** cubic yards of debris removed |
| 2. Maintain levees by:<br>a) Visually inspecting each levee at least twelve times | # of visual inspections conducted (entire length) | PY1 - PY5 | **44** visual levee/floodway inspections conducted |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| b) Conducting erosion repair, as needed | # of erosion repairs by levee | Permit Year (PY) 1 - PY5 | **43** erosion repairs completed |
| c) Removing litter, mowing, managing vegetation, and maintaining levee access as needed | # of acres mowed (entire system) | PY1 - PY5 | # of acres included with Levee maintenance in 1(c) |
| | Volume of litter and debris removed in CY | PY1 - PY5 | Volume removed is included in debris removed with Levee maintenance in 1 (c) above |
| ***Inlet System Inspections & Maintenance*** | | | |
| 1. Conduct 12,000 inlet inspections within the City's jurisdiction | Types and locations of inlets inspected | PY1 - PY5 | **30,692** inlets inspected |
| 2. Clean and repair inlets as necessary. Inlet cleaning and repair activities include:<br>a) Cleaning inlets by removing material(s) | Number, type, and locations of inlets cleaned | PY1 - PY5 | **18,600** inlets cleaned |
| | Volume of material removed from inlets in CY | PY1 - PY5 | *Included in A.1.a.3 Storm Drain system debris removal* |
| b) Repairing damaged inlets | Number, type(s) and locations of inlets repaired | PY1 - PY5 | **34** inlets repaired |
| 3. Inspect inlet protection devices at City-owned facilities | # of devices inspected | PY1 - PY5 | **571** inlet protection devices inspected quarterly |
| | # Repairs/device replacements completed | PY1 - PY5 | **127** inlet protection devices were repaired; **37** replaced |
| | # New devices installed | PY1 - PY5 | **32** new inlet protection devices were installed |
| | Volume of material removed from inlet protection devices | PY1 - PY5 | *Included in A.1.a.3 Storm Drain system debris removal* |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| ***Retention/Detention Facility Inspections & Maintenance*** | | | |
| 1. Inspect at least ten (10) City-owned retention/detention ponds per year and each pond at least once during the permit term. | # of Ponds inspected | Permit Year (PY) 1 - PY5 | **40** pond inspections conducted on 13 ponds |
| 2. Maintain the flood control capacity and water quality efficacy of City-owned detention/retention ponds. | Number and type of pond maintenance activities performed (de-silting, litter removal, etc) | PY 1 - PY 5 | **40** maintenance activities completed |
| | Volume of materials removed in CY | PY 1 - PY 5 | **2,798** cubic yards of debris removed |
| ***Creek/Channel Maintenance*** | | | |
| 1. Respond to creek and channel maintenance requests | Number and type(s) and creek and channel maintenance requests | PY 1 - PY 5 | **158** External service requests<br>**71** Internal maintenance request<br>**229** total service request |
| 2. Maintain the flood control capacity and water quality efficacy of City-owned creeks and channels | Number of locations with dredging/ de-silting performed | PY 1 - PY 5 | **229** creek/channel maintenance requests completed |
| | Miles of channel with vegetated buffer management | PY 1 - PY 5 | **55.2 miles** of vegetative buffer management along creeks and channels |
| | Volume of materials removed from City-owned waterways in CY | PY 1 - PY 5 | **24,234** cubic yards of debris removed<br>**52** acres mowed |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| 3. Respond to service requests related to surface water quality | Number, Type(s) and locations of water-quality related response activities performed | Permit Year (PY) 1 - PY5 | City responded to **289** water quality service requests |
| 4. Investigate cause and effect for service requests related to Fish Kills | Number of Fish-kill investigations performed | PY 1 - PY 5 | **16** investigations |
| | Number of reported Fish-kills with more than 50 identified fish/wildlife mortalities | PY 1 - PY 5 | **15** reportable fish-kill events |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| ***Stormwater Interceptor Program*** | | | |
| 1. Inspect the City-owned in-line stormwater interceptors. | # of Interceptor inspections performed | Permit Year (PY) 1 - PY5 | **1,935** interceptor inspections conducted |
| 2. Clean the City-owned in-line stormwater interceptors. | # of Cleaning events performed | PY1 - PY5 | **745** interceptor cleaning |
| | Volume of material removed in CY | PY1 - PY5 | **194,694** gallons of stormwater runoff containing debris was removed |
| 3. Update inventory of the City-owned in-line stormwater interceptors. | # of Interceptors added to City system | PY1 - PY5 | **7** interceptors were added to the system |
| **A (2) Floatables** | | | |
| ***A (2) a - Litter Booms*** | | | |
| 1. Inspect litter booms for trapped materials, at least two (2) times per year. | # of Litter boom inspections performed | PY1 - PY5 | **144** Litter boom inspections conducted |
| 2. Remove, dispose, and recycle if possible, collected materials. | Volume of floatables collected and disposed in CY | PY1 - PY5 | **553** cubic yards of debris was removed |
| ***A (2) b - Special Events Floatable Protection*** | | | |
| 1. Prevent floatables from entering the storm drainage system during special events | # of events where litter intervention is provided | PY1 - PY5 | **7** events utilized litter intervention inlet protection |
| | # of inlets protected | PY1 - PY5 | **318** inlets were protected |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| | Volume of debris from related street cleaning/disposal in tons | Permit Year (PY) 1- PY5 | Estimated at **18** tons of litter |
| ***A (2) c - Litter Abatement*** | | | |
| 1. Perform a bi-annual review of the City litter/floatables program, and identify any necessary opportunities for improvement | # of reviews, and recommendations made | Permit Years 1, 3 and 5 | Litter programs across multiple departments reviewed; three (**3**) recommendations made/implemented:<br>• Implement Operation Beautification neighborhood cleanups<br>• Participate in KDB Litter Survey<br>• Participate in Regional Reverse Litter Campaign |
| 2. Participate in local and regional litter abatement programs (eg, TREES, Keep Dallas Beautiful, Trinity Trash Bash, etc) | # of events participated in by City staff | PY1- PY5 | Three events:<br>• Lake Ray Hubbard Cleanup<br>• KDB Litter Survey<br>• Operation Beautification |
| 3. Retrieve Litter and floatables litter abatement activities | Volume of Debris collected in tons | PY1- PY5 | Approximately **760** tons from Lake Ray Hubbard, and Operation Beautification |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **A (3) Roadways** | | | |
| ***A (3) a - Street Sweeping*** | | | |
| 1. Sweep the prime network roads twelve (12) times per year. | Total gutter miles of prime network roads swept | PY1- PY5 | **39,782** miles of prime network roads swept |
| | Volume of debris collected from prime network roads in CY | Permit Year (PY) 1 - PY5 | **12,199** cubic yards of debris removed from prime network roads |
| 2. Sweep the Central Business District five times a week and other areas, as needed. | Total gutter miles swept in the Central Business District and other areas | PY1 – PY5 | **234** Central Business District gutter miles swept 5 times per week |
| | Volume of debris collected from the Central Business District and other areas in CY | PY1 – PY5 | **3,834** cubic yards of debris removed from Central Business District roads |
| 3. Evaluate the efficacy of the street sweeping program. | Program evaluation completed. | Permit Years 1, 3 and 5 | Program evaluated as part of SWMP development; no changes recommended at this time. |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| ***A (3) b - Deicing*** | | | |
| 1. Sweep the streets where deicing materials have been applied to icy patches. | # of icing events | Permit Year (PY) 1 – PY5 | **0** there were no icing events during the reporting period |
| | Total gutter miles treated | PY1 – PY5 | **0** gutter miles treated |
| | Total treated gutter miles swept | PY1 – PY5 | **0** treated gutter miles swept |
| 2. Evaluate availability and feasibility of innovative deicing techniques | Program evaluation completed | Permit Years 1, 3 and 5 | **0** reviews performed; no deicing products were deployed to allow evaluation |
| ***A (3) c - Road and Bridge Maintenance Program*** | | | |
| Incorporate temporary or permanent SCMs to reduce pollutants from routine maintenance activities for roads and bridges:<br>a) Temporary inlet protection<br>b) Erosion control measures (e.g., silt fence, re-vegetative measures, soil stabilizing matting, etc.),<br>c) Rock berms or check dams,<br>d) Stabilized construction entrances, and/or<br>e) Work area dewatering measures. | Number, type and location of SCMs implemented | PY1 – PY5 | **1,551** road and bridge maintenance projects were completed during reporting period<br>**4,544** inlets were protected<br>**1,010** feet of silt fencing were installed<br>**1,221** square feet of sod were installed<br>**1** construction entrance was installed |

| Table B-1<br>Summary of Performance: MCM 2 - Post-Construction Stormwater Control Measures | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **B (1)** ***Implement Comprehensive Master Planning Process for New and Redevelopment Projects*** | | | |
| ***B (1) a - Implement iSWM into Local Design Practices*** | | | |
| 1) Participate in City and regional implementation of integrated Stormwater Management (iSWM) master planning process for new and redevelopment projects. | Number, size, type and location of projects implemented using iSWM within City limits | Permit Year (PY) 1 - PY 5 | Four projects in planning and design; construction estimated to be complete in PY2; one under construction with completion in PY2 |
| 2) Expand existing City iSWM program to apply to sites greater than one acre in size | Number, size, type and location of projects implemented using iSWM within City limits | Permit Year 2 | Measure is in process |
| ***B (1) b -Implementation and Performance of Structural /Non-structural Controls*** | | | |
| Promote the use of Low Impact Development (LID) and green infrastructure controls including, but not limited to:<br>a) Green Roofs<br>b) Rain harvesting systems<br>c) Retention Ponds<br>d) Riparian buffer systems<br>e) Permeable pavement<br>f) Bio-swales<br>g) Constructed wetlands<br>h) Other | Number, type(s) and locations of LID features implemented at City facilities | Permit Year 2 - PY 5 | **0** there were no facilities completed with exterior LID features during the reporting period |
| | Number, size, type(s), land use and locations of new and redevelopment projects over 1 acre | PY2 – PY5 | NA |
| | Correlate water quality data with and data concerning types and locations of post construction controls in order to assess effectiveness of LID/Green Infrastructure | PY4 – PY5 | NA |

| Table B-1 (Continued)<br>Summary of Performance: MCM 2 - Post-Construction Stormwater Control Measures | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| ***B (1) Implement Comprehensive Master Planning Process for New and Redevelopment Projects (Continued)*** | | | |
| ***B (1) c - Dallas City Code Review and Update*** | | | |
| 1) Identify changes made to Dallas City Code with regard to federal, state, and local environmental regulations and design practices. | Number and types of updates made to Dallas City Code | Permit Years (PY) 1, 3 and 5 | **2** code updates (1 Development code and 1 Stormwater) |
| ***B (2) Evaluation of Flood Control Projects*** | | | |
| 1) Evaluate City capital improvement projects for flood control on a case-by-case basis to assess feasibility of incorporating stormwater controls to address water quality | # of Flood control/drainage project designs evaluated | PY1 - PY5 | 7 projects in planning |
| | # of Flood control/drainage construction projects with water quality measures initiated | PY1 - PY5 | 2 projects initiated |
| | # of Flood control/ drainage construction projects with water quality measures completed | PY1 - PY5 | 1 project completed |
| | Types and locations of measures implemented | PY1 - PY5 | Erosion and velocity control measures; constructed wetlands |

| Table C-1<br>Summary of Performance: MCM 3- Illicit Discharge Detection and Elimination | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **C (1) Illicit Discharge Detection and Elimination** | | | |
| Work to correct the discharge, or remove the improperly disposed materials, within 30 days or as soon as reasonably possible. | #of illicit discharges and illegal disposal sources identified and the time to resolve | Permit Year 1 (PY1) - PY5 | 184 illicit discharge investigations; 2 illicit discharges, all resolved within 30 days. |
| **C (2) Detection and Elimination of Illicit Discharges** | | | |
| ***C (2) a – Illicit Discharge Investigations*** | | | |
| Facilitate public reporting and response to resident concerns regarding illegal dumping or improper discharge of non-stormwater materials. | Number and types of illicit discharge related calls received per watershed | PY1 - PY5 | **2,035** investigations conducted in response to public reporting; types of investigations summarized in Table 1-C.1 |
| ***C (2) b – Illegal Dumping and Improper Disposal Investigations*** | | | |
| Detect, Inspect and investigate illicit discharges and /or improper disposals | # and type of investigations conducted | PY1 - PY5 | **229** investigations conducted concerning illegal dumping; types of investigations summarized in Table 1-C.1 |
| ***C (2 ) c - Grass Clippings, Leaf Litter and Animal Waste Management*** | | | |
| Work to reduce improper disposal of grass clippings and leaf litter | # of Leaf Litter Blitzes provided | PY2 - PY5 | NA this period |
| | # of homes and businesses contacted through concerning yard waste | PY1 - PY5 | 34 |
| | # of pamphlets and NOVs provided | PY1 - PY5 | 254 |

| Table C-1<br>Summary of Performance: MCM 3- Illicit Discharge Detection and Elimination | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| Work to reduce impacts from improper animal waste management by participating in local and regional Feral Hog initiatives | # of meetings attended by City personnel | PY1 - PY5 | City personnel participated in **13** regional and local meetings concerning Feral Hogs |
| | # of recommendations developed and implemented | PY1 - PY5 | Two (2) recommendations for surveying and trapping made and implemented |
| Review tax records, and other data sources to identify areas where additional controls may be required to prevent animal wastes from impacting the MS4 | # of tax records obtained | Permit Year 2 | NA this period |
| | # of properties identified | Permit Year 3 | NA this period |
| | # of properties reviewed for additional control requirements | Permit Year 4 | NA this period |
| **C (3) Limit Sanitary Sewer Overflows and Infiltration** | | | |
| 1. Minimize the number and effects of sanitary sewer releases to storm drains by:<br>a) Inspecting sanitary sewer pipes; | Miles of sanitary sewer inspected using CCTV | PY1 - PY5 | **373** miles of sanitary sewer inspected |
| b) Performing preventative maintenance of the sanitary sewer system; and | Miles of root control application completed to sanitary sewers | PY1 - PY5 | **143** miles of root control completed |
| c) Cleaning and repairing the sanitary sewer system. | Miles of sanitary sewer pipes cleaned | PY1 - PY5 | **2,872** miles of sanitary sewer cleaned |
| | Number and location of repairs completed per watershed | PY1 - PY5 | **5,328** sanitary sewer repairs completed |
| 2. Evaluate effectiveness of sanitary sewer overflow SCMs. | Identified wet weather and dry weather sanitary sewer discharges to the MS4 | PY1 - PY5 | **156** wet weather sanitary sewer overflows identified |

| Table C-1<br>Summary of Performance: MCM 3- Illicit Discharge Detection and Elimination | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| | Locations of wet weather and dry weather sanitary sewer overflows per watershed | PY1 - PY5 | **72** dry weather sanitary sewer overflows identified |
| **C (4) Household Hazardous Waste and Used Motor Fluids Program** | | | |
| 1. Promote and participate in the Dallas County Home Chemical Collection Center (HC3). | Motor vehicle fluids and HHW collected from City of Dallas residents per Year | Permit Year (PY) 1 - PY5 | **26,444** gallons of used oil and antifreeze collected<br>**786.2** tons of HHW collected at the HC3 during the reporting period |
| 2. Assist Dallas County with one (1) off-site Household Hazardous Waste (HHW) collection event. | Motor vehicle fluids and HHW collected from City of Dallas residents collected through this off-site event | PY1 - PY5 | **373** gallons of used oil and antifreeze collected and<br>**14.8** tons of HHW was collected from Dallas resident during the 2 City sponsored events |
| **C (5) MS4 Screening and Illicit Discharge Inspections** | | | |
| Detect, inspect, and investigate illicit discharges and/or improper disposals. | Illicit discharges or improper disposals | PY1 - PY5 | **229** investigations conducted; types of investigations summarized in Table 1-C.1 |
| Facilitate public reporting and response to resident concerns regarding illegal dumping or improper discharge of non-stormwater materials. | Number and types of illicit discharge related calls | PY1 - PY5 | **2,035** investigations conducted in response to public reporting; breakdown by type is included in Table 1-C.1 |
| **C (6) NPDES and TPDES Permittee List** | | | |
| Maintain a list of dischargers to the MS4 with TPDES/ NPDES stormwater permits associated with industry and construction activities. | Name, location, and TPDES/NPDES permit number for each permitted activity | PY1 - PY5 | **1,615** Industrial permits, **695** construction permits; see **Appendix A** |

| Table C-1<br>Summary of Performance: MCM 3- Illicit Discharge Detection and Elimination | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **C (7) MS4 Map Verification and Update** | | | |
| 1. Verify existing drainage asset data (i.e., inlets, outfalls, pipes and other features) | Number and types of asset system updates through existing system verification | PY1 - PY5 | **23,154** updates; see current maps in **Appendix B** |
| 2. Compile new drainage asset data (i.e., inlets, outfalls, pipes and other features) to a unified asset inventory system and assign unique identifier. | Number and types of updates to asset mapping database that reflect new assets | PY1 - PY5 | **24** new storm sewer systems containing **3,063** new assets added |
| 3. Review data acquisition procedures, and revise as necessary. | Document review conducted and any recommended revisions to the SWMP | PY1 - PY5 | Data acquisition procedures have been reviewed, no updates deemed necessary at this time. |

| Table D-1<br>Summary of Performance: MCM 4 - Pollution Prevention & Good Housekeeping for Municipal Operations | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **D (1) Establish Pollution Prevention Program** | | | |
| 1. Implement EMS program to promote continuous improvement with respect to pollution prevention and good housekeeping at municipal operations | # of internal environmental audits performed | Permit Year (PY) 1 - PY5 | **189** |
| | # of external environmental audits performed | PY1 - PY5 | **3** |
| | % of identified environmental issues addressed within 90 days. | PY1 - PY5 | **100%** interim/ **75%** 4th quarter |
| | # green procurement contracts utilized | PY1 - PY5 | One - EBS |
| | # of SOGs, BMPs, ADs and work instructions updated to reduce pollutant runoff from municipal operations | Permit Year 1, 3 and 5 | **2**, EBS & DFR |
| 2. Reduce potential for pollution by reducing the number and quantity of harmful chemicals used for municipal operations | # of non-toxic chemicals used | PY1 - PY5 | **1,696** |
| | Total # of chemicals used | PY1 - PY5 | **13,587** |
| | % of non-toxic chemicals used | PY1 - PY5 | **13**% |
| 3. Maintain list of municipal facilities included in EMS Program | # of City facilities audited | PY1 - PY5 | **356** |
| 4. Promote good housekeeping practices for City facilities and vehicles to minimize spills and pollutant discharge into the MS4. | # of oil/water separator cleanings | PY1 - PY5 | **15** |
| | # of City vehicles recieving preventative maintenance | PY1 - PY5 | **19,088** |
| | Total # of vehicular spills | PY1 - PY5 | **255** |

| Table D-1<br>Summary of Performance: MCM 4 - Pollution Prevention & Good Housekeeping for Municipal Operations (Continued) | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **D (2) Structural Control Maintenance** | | | |
| 1. Implement Structural Control Maintenance Program | Track types of structural control activities, and wastes removed | Permit Year (PY) 1 – PY 5 | Structural Control maintenance activities are summarized in detail in Table A-1 |
| **D (3) MS4 Waste Management** | | | |
| 1. Promote good housekeeping practices by tracking appropriate waste management by City facilities | # of City owned vehicular/equipment spills that enter the MS4 | | **8** |
| | # of City Departments that are small quantity conditionally exempt waste generators | PY1 - PY5 | **298** |
| | # of City Departments that are large quantity waste generators | PY1 - PY5 | **1** |
| 2. Promote good housekeeping practices by tracking appropriate waste management by City facilities | Volume of waste managed in support of Emergency response and spill remediation in tons | PY1 - PY5 | **8.53 tons** |
| | Volume of classified hazardous and universal waste managed by the City facilities in tons | PY1 - PY5 | **70 tons** |
| 3. Promote effective waste management for waste removed from the MS4 | Volume of wastes removed through MS4 maintenance activities in tons | PY1 - PY5 | **52,500 tons** |

| Table E-1<br>Summary of Performance: MCM 5 - Industrial and High Risk Runoff | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012** |
| **E (1) Inspections and Control Measures** | | | |
| 1. Inspect 500 permitted industrial facilities known to the City. | # and type of inspections performed | Permit Year (PY)1 – PY5 | **1,126** inspections<br>(433 NOI, 693 NEC) |
| 2. Inspect all Superfund Amendment and Reauthorization Act (SARA) 313 facilities. | # and type of inspections performed | PY1 – PY5 | **139** inspections (all) |
| 3. Inspect permitted municipal landfills and Treatment, Storage and Disposal (TSD) facilities. | # and type of municipal landfills inspected | PY1 – PY5 | 2 landfill inspections |
| | # and type of TSDs | PY1 – PY5 | 4 Transfer Stations |
| 4. Inspect City facilities required to have a Notice of Intent (NOI) and that are subject to Emergency Planning and Community Right-to-Know Act (EPCRA) Title III, Section 313. | # and type of inspections performed | PY1 – PY5 | 8 |
| 5. Inspect Sector U, (Food Products and Kindred Products) and other similar facilities that have the potential to discharge biological constituents. | # and type of inspections performed | PY1 – PY5 | 30 facility inspections /4 enforcement inspections |

| Table E-1<br>Summary of Performance: MCM 5 - Industrial and High Risk Runoff (Continued) | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012** |
| **E (2) Industrial Monitoring and Screening Program** | | | |
| 1. Screen facilities with a Standard Industrial Classification (SIC) code that may require permitting under the Multi-Sector General Permit. | # of facilities identified through screening process that have SIC Codes that may require a MSGP Permit | Permit Year (PY)1 – PY5 | 1,080 non-permitted sites identified through screening<br>98 New TPDES facilities permitted |
| 2. Evaluate the effectiveness of the screening program. | # of new permits received as a result of screening | PY1 – PY5 | 98 New permits; 285 permit renewals |
| 3. Use monitoring data review to enhance facility compliance | % of industrial facilities submitting required benchmark monitoring data | PY1 – PY5 | 65% |
| | % of submitted facility data sets that are compliant with benchmark parameters | PY1 – PY5 | 60% |
| | # of Corrective Action Plans required to achieve compliance | PY1 – PY5 | 30 Corrective Action Plans required |
| | % Action Plan Facilities brought into compliance | PY1 – PY5 | 65% |

| Table F-1<br>Summary of Performance: MCM 6 - Construction Site Stormwater Runoff Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **F (1) Use and Requirements for Structural and Non-Structural BMPs** | | | |
| Require and inspect Stormwater Pollution Prevention Plans (SWPPPs) for specific building and construction permits in accordance with State regulations. | # of SWPPPs presented | Permit Year (PY) 1 - PY5 | **87** SWPPPs were presented to the City through the private development process |
| Require site plan reviews that incorporate considerations of water quality impacts, receipt and consideration of information submitted by the public and site inspection processes | # of projects that were evaluated through Planning and Zoning Process | PY1 – PY5 | **373** |
| **F (2) Inspection of Construction Sites and Enforcement of Control Measure Requirements** | | | |
| 1) Inspect construction sites for compliance with stormwater management practices. Conduct inspections as follows:<br>a) Five (5) acres and greater in size, in the escarpment or geologically similar area, or part of a common plan of development: every two (2) weeks; | Number, type and location of inspections | PY1 - PY5 | **355** construction sites five (5) acres or larger, sites part of a commom plan of development or within escarpment of geographically similar area (“large sites”)<br>**6,428** inspectionsof large construction sites |
| b) Sites greater than or equal to one (1) acre and less than five (5) acres in size on a monthly basis | Number, type and location of inspections | PY1 - PY5 | **340** construction sites with ground disturbances of one to five acres (“small sites”)<br>**2,668** inspections on small sites |
| 2. Conduct supplemental inspections of construction sites in response to complaints. | Number, type and location of inspections | PY1 - PY5 | **39** inspections on complaint responses of construction sites |

| Table G-1<br>Summary of Performance: MCM 7 - Public Education and Outreach/Public Involvement Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **G (1) Public Education and Outreach** | | | |
| **G (1) a.1 - Community Education** | | | |
| 1. Present one (1) annual presentation to community organizations in each of the five (5) target programs:<br>• Illicit discharge (IDDE)<br>• Pesticides, herbicides and fertilizers (PHF)<br>• Used Oil Toxic Materials (UOTM)<br>• Pet waste<br>• Yard waste | Number of presentations for each program, and attendees | Permit Year (PY) 1 - PY 5 | Presented **54** community presentations and events to **5,743** resident participants.<br>• **8** - Illicit discharge (IDDE)<br>• **16** - Pesticides, herbicides and fertilizers (PHF)<br>• **6** - Used Oil Toxic Materials (UOTM)<br>• **4** - Pet waste<br>• **3** - Yard waste<br>Also presented community presentations and events in the following programs.<br>**1** – Litter & Floatables<br>**16** – General Stormwater Education |
| **G (1) a. 2 - School Education** | | | |
| 1. Present five (5) educational presentations per year to K-12 students within the City's watersheds, including assemblies, camps, story time, and library events. | Number and geographic distribution of presentations | PY1 - PY5 | **48** educational presentations to **2,395** K-12 students.<br>Presented education to university-level, teachers, and school facility management staff.<br>• 6 classes to 178 university-level students<br>• 2 presentations to 54 teachers<br>• 3 workshops to 117 facility management staff |

| Table G-1<br>Summary of Performance: MCM 7 - Public Education and Outreach/Public Involvement Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **A.3 Business Education** | | | |
| 1. Present one (1) annual presentation to businesses/ trade organizations in each of the five (5) target programs:<br>• Illicit discharge (IDDE)<br>• Pesticides, herbicides and fertilizers (PHF)<br>• Used Oil Toxic Materials (UOTM)<br>• Yard waste<br>• Animal waste | Number and geographic distribution of presentations | Permit Year (PY) 1 - PY 5 | Presented **7** presentations and events to **1,597** business/trade organizations participants.<br>• 4 - Illicit discharge (IDDE)<br>• 0 - Pesticides, herbicides and fertilizers (PHF)<br>• 1 - Used Oil Toxic Materials (UOTM)<br>• 0 - Yard waste<br>• 0 - Animal waste<br><br>In additional to 5 target programs, also presented 2 General Stormwater education presentations. |
| **G (1) b - Technical Training** | | | |
| **G (1) b.1 - Construction Site Operator Program** | | | |
| 1. Present two (2) workshops to contractors, operators and construction site affiliated personnel on acceptable construction site SCMs, per year. | # of workshops provided and number of attendees | PY1 - PY5 | **8** Construction Workshops to **244** contractors, operators, and construction site affiliated personnel. |
| 2. Present on-site consultations to operators and construction site personnel on site-specific construction site SCMs, per year. | # of consultations provided and number of attendees | PY1 - PY5 | **114** on-site consultations to **185** to operators and construction site personnel. |

| Table G-1<br>Summary of Performance: MCM 7 - Public Education and Outreach/Public Involvement Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| 3. Present on-site tail-gate training sessions to operators and construction site personnel on acceptable construction site SCMs, per year. | # of tailgate training sessions provided and number of attendees | Permit Year (PY1) 1 - PY5 | Presented 9 on-site tail-gate training sessions to **71** operators and construction site personnel. |
| **G (1) b.2 - Industrial Operator Workshops** | | | |
| Present two (2) workshops to industrial operators on TPDES stormwater permit requirements, per year. | Workshops provided and number of attendees | PY1 – PY5 | Presented 5 workshops to 195 industrial operators. |
| **G (1) b.3 - Municipal Staff Training (Inreach)** | | | |
| 1. Publish two (2) electronic announcements addressing stormwater management, per year. | # of Announcements published | PY1 – PY5 | Published 12 electronic announcements |
| | Topic(s) of announcements published | PY1 – PY5 | Used Oil and Toxic Materials (SW301 Online Training Module). |
| 2. Provide two (2) internal training events on current stormwater issues, per year. | # training events and attendees | PY1 – PY5 | Provided 8 internal training events to 204 municipal staff members. |
| 3. Educate employees about stormwater pollution prevention practices. | Number of employees completing "Stormwater Awareness Training" during new employee orientation | PY1 – PY5 | Educated **1,252** employees during new employee orientation.<br>**89** employees learned about stormwater pollution prevention by taking the stormwater online modules. |

| Table G-1<br>Summary of Performance: MCM 7 - Public Education and Outreach/Public Involvement Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| 4. Provide at least one (1) internal and one (1) community training on spill prevention, per year. | Training events conducted on Spill Prevention and number of attendees | Permit Year (PY) 1 - PY5 | Conducted 9 Spill Response and 1 Fish Kill training classes for 206 employees. |
| 5. Provide at least one (1) internal City spill response training, per year. | Training events conducted on Spill Response and number of attendees | PY1 – PY5 | Provided 1-40 hour and 1-8 hour refresher Hazwoper training classes. |
| 6. Identify City employees certified to perform incident response. | Number(s) of staff trained and types of certifications | PY1 – PY5 | 28 staff trained to perform incident response. |
| **G (2) Public Participation/Involvement** | | | |
| **G (2) a - Volunteer Opportunities** | | | |
| 1. Encourage participation in the Texas Stream Team volunteer water quality monitoring program within the City limits of Dallas. | # of Texas Stream Team trainings and recertified members | PY1 – PY5 | 4 Texas Stream Team training classes offered |
| | Number of participants and watersheds represented | PY1 – PY5 | 45 citizens completed Texas Stream Team certification classes. |
| 2. Encourage participation in the storm drain marking program. | Number of participants and watersheds represented | PY1 – PY5 | 7 Storm Drain Marking events in 5 different watersheds with 152 participants |
| | # of Storm drains marked | PY1 – PY5 | 383 storm drains marked |
| **G (2) b - SWMP Development/Public Involvement** | | | |
| 1. Develop update to website(s) to solicit public input. | Update(s) made, and comments received | Permit Year 1 , 3 and 5 | 1 website update soliciting public input in SWMP development; 4 events also used.<br>Minimal comments received from citizens. |

| Table G-1<br>Summary of Performance: MCM 7 - Public Education and Outreach/Public Involvement Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| 2. Develop newsletter article(s) to solicit public input | Article(s) printed, and comments received | Permit Year 1 – Permit Year 5 | 1 newsletter article developed to solicit public input SWMP development.<br>Minimal comments received from citizens. |
| **G (2) a Education and Outreach Program Evaluation** | | | |
| 1. Evaluate the existing stormwater education program for effectiveness and make recommendations for potential changes to the SWMP in the annual report. | Number of people reached determined by attendance | Permit Years 1, 3 and 5 | **130,395** people reached |
| | Document geographic distribution of outreach program activities in correlation with annual water quality data | Permit Years 2 and 4 | NA |

| Table H-1<br>Summary of Performance: MCM 8 - Monitoring, Evaluation and Reporting | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period** |
| **H (1) Dry Weather Screening** | | | |
| Investigate flows from outfalls during dry weather, sample the discharge, investigate the source, and act to eliminate the discharge. | # of Outfalls inspected, discharges found, and sources identified | Permit Year (PY) 1 - PY 5 | **4,515** Outfalls inspected in **22** watersheds<br>**317** Outfalls with discharges to waterbodies<br>**2** Illicit discharges detected through dry weather monitoring (**186** total) |
| **H (2)/H (4) Wet Weather Screening and Characterization** | | | |
| 1. Coordinate with the NCTCOG Regional Wet Weather Characterization Program and perform sampling per RWWCP schedule. | Wet weather screening results for each watershed sampled | PY1 - PY5 | Two (2) watersheds screened and sampled for wet weather data |
| 2. Perform bi-annual wet weather screening within designated watersheds once per permit term in accordance with the local Wet Weather Sampling Program. | Wet weather screening results for each watershed sampled | PY1 - PY5 | Six (6) watersheds screened and sampled for wet weather data |
| **H (3) Industrial and High Risk Monitoring** | | | |
| 1. Identify and prioritize the facilities that have the potential to discharge pollutants into the MS4. | # of Facilities required to submit monitoring data | PY1 - PY5 | 191 |
| | # of data sets received and reviewed | PY1 - PY5 | 126 |
| 2. Evaluate SCMs, or inspection and monitoring programs, for effectiveness. | # of Facilities required to submit an Action Plan and/or more frequent monitoring to reduce pollutants discharged into the MS4 | PY1 - PY5 | 17 |

| Table H-1, (Continued)<br>Summary of Performance: MCM 8 - Monitoring, Evaluation and Reporting | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period** |
| **H (5) Floatables Monitoring** | | | |
| 1. Inspect litter booms for trapped materials, at least two (2) times per year. | # of Litter boom inspections performed | PY1 - PY5 | **144** Litter boom inspections conducted |
| 2. Remove, dispose, and recycle if possible, collected materials. | Volume of floatables collected and disposed in CY | PY1 - PY5 | **553** cubic yards of debris was removed |
| **H (6) Rapid Bio-Assessment Protocol Monitoring** | | | |
| 1. Perform Rapid Bioassessment Protocol monitoring in at least three (3) watersheds plus a reference site, per year. | RBP monitoring results | PY1 - PY5 | 22 Permit watersheds monitored<br>73 Water quality sites<br>26 Bioassessment sites<br>2 Bioassessment sample periods per year |
| **H (7) TMDL Implementation Plan Support** | | | |
| 1. Develop Interim Bacteria Reduction Plan (iBRP) that outlines measures the City will implement to reduce Bacteria concentrations within the City | Append iBRP to SWMP | Permit Year 1 | iBRP completed and Appended to SWMP |
| 2. Participate in development of a Total Maximum Daily Load (TMDL) Implementation Plan for bacteria. | Document participation | PY1 – PY5 | Staff from 6 departments attended 12 meetings |
| 3. Participate in development of a TMDL Implementation Plan for polychlorinated biphenyls (PCBs) in fish tissue. | Document participation | PY1 – PY5 | Staff from 3 Departments attended 3 meetings |
| 4. Provide ambient conditions sampling at 3 locations along the Upper Trinity River in accordance with TRA TCRP QAPP protocols | Provide ambient water quality results in SWMP Annual report | PY1 – PY5 | Data included in Appendix E |

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### MS4 Performance Summary Tables



### Activity Summary Tables

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## List of Abbreviations and Acronyms

| | |
|---|---|
| AD | Administrative Directive |
| ALU | Aquatic Life Use |
| BMPs | Best Management Practices |
| CCTV | Closed Circuit Television |
| CGP | Construction General Permit |
| CMOM | Capacity Management Operations and Maintenance |
| CRMS | Customer Response Management System |
| CRP | Clean River Program |
| CSN | Construction Site Notice |
| CY | Cubic Yard |
| EBS | Equipment Building Services (City Facility Maintenance Department) |
| EDMS | Environmental Data Management System |
| EMS | Environmental Management System (Per ISO 140001) |
| EPA | Environmental Protection Agency |
| *E. coli* | *Escherichia coli*; (indicator bacteria) |
| FEMA | Federal Emergency Management Agency |
| GIS | Geographic Information System |
| GPS | Global Positioning System |
| HC3 | Household Chemical Collection Center |
| HHW | Household Hazardous Waste |
| HUC | Hydrologic Unit Code |
| IBI | Index of Biotic Integrity |
| iBRP | Interim Bacteria Reduction Plan |
| ISO | International Standards Organization |
| iPLAN | Implementation Plan |
| IPM | Integrated Pesticide Management Program |
| iSWM | Integrated Stormwater Management Program |
| LEED™ | Leadership in Energy and Environmental Design |
| LID | Low Impact Development |
| MCM | Minimum Control Measure |
| MEP | Maximum Extent Practicable |
| mL | Milliliter |
| MPN | Most Probable Number |
| MS4 | Municipal Separate Storm Sewer System |
| MSGP | Multi-Sector General Permit (Industrial Facility Permit) |
| NC | Non-compliance |
| NCTCOG | North Central Texas Council of Governments |
| NELAP | National Environmental Laboratory Accreditation Program |

## List of Acronyms and Abbreviations (Continued)

| | |
|---|---|
| NEC | No-Exposure Certification |
| NOC | Notice of Change |
| NOI | Notice of Intent |
| NOT | Notice of Termination |
| NOV | Notice of Violation |
| NPDES | National Pollutant Discharge Elimination System |
| PHF | Pesticides, Herbicides, and Fertilizer |
| PY# | Permit Year Number |
| QAPP | Quality Assurance Project Plan |
| RBP | Rapid Bioassessment Protocols |
| RWWCP | Regional Wet Weather Characterization Program |
| SARA | Superfund Amendment and Reauthorization Act |
| SCM | Stormwater Control Measure |
| SCN | Small Site Construction Notification |
| SDE | Spatial Data Engine |
| SOG | Standard Operating Guidance |
| SOP | Standard Operating Procedure |
| SSO | Sanitary Sewer Overflow |
| SWIMS | Stormwater Information Management System |
| SWM | Stormwater Management Program |
| SWMP | Stormwater Management Plan |
| SWPPP | Stormwater Pollution Prevention Program |
| TAC | Texas Administrative Code |
| TCEQ | Texas Commission on Environmental Quality |
| TMDLs | Total Maximum Daily Load |
| TRA | Trinity River Authority |
| TPDES | Texas Pollutant Discharge Elimination System |
| TPWD | Texas Park and Wildlife Department |
| TWM | Trinity Watershed Management Department |
| UOTM | Used Oil and Toxic Materials |
| WWTF | Wastewater Treatment Facility |

# 1. STATUS OF IMPLEMENTING THE STORMWATER MANAGEMENT PLAN

In accordance with Part IV.C of the City's permit, this section provides the status of implementing the Stormwater Management Plan (SWMP), including the permit-defined Minimum Control Measures (MCMs) (or Elements) during the initial Reporting Period. The Reporting Period summarizes performance for the following time frames:

- **Interim Period**: February 22, 2011 to September 30, 2011 (from the end of the last permit term to the beginning of new permit term);
- **Permit Year 1** (PY1): October 1, 2011 to September 2012.

The reporting arrangement is consistent with the City request to the TCEQ in July, 2012, and follows prior written agreement with the TCEQ concerning reporting for the interim period.

On October 6, 2011, the Texas Commission on Environmental Quality (TCEQ) renewed Texas Pollution Discharge Elimination System (TPDES) Municipal Separate Storm Sewer System (MS4) permit No. WQ00043960000 (Permit) for the City of Dallas (City). The permit requires the City to "*develop, implement, and revise, as necessary, a comprehensive Storm Water Management Program (SWMP) which includes pollution prevention measures, treatment or pollutant removal techniques, storm water monitoring, use of legal authority, and other appropriate means to control the quality of storm water discharged from the MS4 that reach Waters of the United States (U.S.).*" The Permit requires that, "*each element of the plan must be developed to include measurable goals, whenever feasible.*" In August 2010 as a part of the permit renewal process, the City submitted a new draft SWMP to meet the anticipated TCEQ MS4 permit requirements. This revised SWMP replaced and superseded any previous SWMPs applicable or deemed to be applicable under the TPDES MS4 permit.

Upon receipt of the final permit from the TCEQ in October 2011, the City revised and updated the original draft SWMP to incorporate changes to the permit requirements. This second draft SWMP was made available to the public through placement in the Public Libraries, and on the City's Stormwater webpage (www.wheredoesitgo.com). Comments were solicited through the newsletter, flyers, and in person at several events with large attendance such as EarthFest, and the Dallas Home and Garden Show. This second draft SWMP was finalized to incorporate minor citizen and departmental comments, and the Interim Bacteria Reduction Plan (iBRP) with related activities. A copy of the final SWMP and iBRP was transmitted to the TCEQ with this Annual Report.

The SWMP is organized and structured in eight (8) MCMs, or Elements:

MCM/Element 1: MS4 Maintenance Activities

MCM/Element 2: Post Construction Stormwater Control Measures

MCM/Element 3: Illicit Discharge Detection and Elimination

MCM/Element 4: Pollution Prevention and Good Housekeeping

MCM/Element 5: Industrial and High Risk Runoff

MCM/Element 6: Construction Site Stormwater Runoff

MCM/Element 7: Public Education, Outreach, Involvement and Participation

MCM/Element 8: Monitoring, Evaluation and Reporting

The report generally follows the format set forth in Section IV.C of the permit, with the exception of placing maps and data into the appendices, and including the program information (Section IV.C.4) as report sections that immediately follow the program/MCM descriptions. This was done to enhance readability of the report, and solely reflects the large volumes of data/information requested for a relatively large MS4 permit area.

In accordance with Section IV.C.3 of the permit, for each MCM/Element, there is a brief discussion of the status of implementing the SWMP, and related compliance schedules, along with any proposed changes to the SWMP for the following permit year, and where applicable, a summary describing the number and nature of enforcement actions.

The implementation status for each of the eight (8) SWMP MCMs is presented in a summary table that outlines performance for each of the Best Management Practices (BMPs) outlined in the SWMP. Those BMPs that also form a part of the interim Bacteria Reduction Plan are shaded in green, to illustrate how these measures have been incorporated into the SWMP, and to show implementation status for these measures.

## *MCM/Element 1-*
## *MS4 Maintenance*

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## A. MCM 1: MS4 Maintenance Activities

This section describes the City's measures to fulfill the permit requirements relative to structural controls, floatables, and roadway maintenance activities to prevent stormwater pollution to the Maximum Extent Practicable (MEP). At present, the City manages a storm drainage system that drains 385 square miles located within five different counties. The City's MS4 infrastructure system includes at least:

- 67,000 Inlets
- 1,800 miles Storm Sewers
- 19,900 feet (3.7 miles) Pressure Sewers
- 9 Street Pump Stations
- 33 miles Levees
- 13 Levee Sump areas with 10 Pump Stations
- 137 Inline Stormwater Interceptors
- 223 Retention/Detention Ponds & Lakes
- 11,000 Drainage outfalls
- 180 miles Creeks and Channels

The City operates structural controls in a manner to reduce the discharge of pollutants through use of a structural control information system (asset inventory), and a program of regular repairs and maintenance for water quality structures, sumps, inlets, levees, detention and retention ponds/basins, stormwater interceptors, creeks and drainage channels that form the Dallas MS4.

- **Status of Implementing the SWMP**: All measures proposed in the SWMP for PY1 are fully implemented per the compliance schedule, and are functioning as intended to prevent the discharge of pollutants to the MS4 to the MEP. A description of these activities related to Structural Controls, Floatables and Roadways follows. Table A-1 at the end of this Section provides a summary of activities completed during the reporting period.
- **Proposed Changes to the SWMP for the next Reporting Year**: The City has reviewed the BMPs within this MCM for effectiveness; there are no changes to the SWMP proposed at this time.
- **Number and Nature of Enforcement Activities**: Not applicable.

### A (1) Structural Controls

The City implements structural controls in compliance with the following Permit requirement: "*to the MEP, the permittee shall operate and maintain the MS4, including any stormwater structural controls, in such a manner as to reduce erosion and the discharge of pollutants*." [Part III.B.2.a.i of TPDES Permit No.WQ0004396000]. Structural controls within the MS4 that are owned, operated and maintained by the City include the conveyances (creeks and channels) in addition to the engineered control systems: drainage inlets and piping systems, culverts, sumps with pump stations and trash racks, detention and retention ponds, litter booms, in-line stormwater interceptor structures, and the Trinity River levees.

### A (1) a - Conveyance System Repair and Maintenance

Regular inspections, maintenance and repair of inlets, pump stations, pipes, and culverts can prevent blockages, reduce flooding and reduce pollution to the MS4. Inspections are conducted through closed circuit televiewing (cctv). The City uses a tiered maintenance approach to prioritize cleaning and repair activities and takes opportunities to incorporate water quality improvement measures into day-today maintenance activities.

**Inlet System Inspections and Maintenance:** The City's inlet inspection program evaluates inlet condition, estimates percentage of inlet box debris fill and geo-locates new inlets that are not identified with a unique identifier in the geographic information system (GIS) database. Inlets requiring maintenance or repair service are entered into the City's Customer Response Management System (CRMS) database for repair or debris removal. Geo-located inlets and other new features are updated to the Stormwater Information Management (SWIMs) GIS database.

- **Inlet Inspections:** The inlet inventory is tracked through a Spatial Data Engine (SDE) with ArcGIS 9.x software. Using a unique identifier assigned by Lucity in SDE, the City tracks the number and location of inlets inspected each year and documents the information in the asset management software. The City inspected **30,692** inlets during the reporting period.

- **Inlet Cleaning Activities and Debris Removal:** The City cleaned **18,600** inlets and repaired **34** damaged inlets during the reporting period. Inlet cleaning activities included removing debris, rinsing inlet boxes, vacuuming debris, and when necessary, jet vacuuming the inlet boxes and adjacent pipes to remove debris.

- **Inlet Protection Device Activities and Debris Removal:** As a part of the floatables program to prevent trash and floatables from entering the MS4, the City has installed inlet protection devices in heavy traffic areas such as Fair Park and the Zoo. The City maintains on average **571** inlet protection devices at City facilities. The inlet protection devices are inspected quarterly and repaired or replaced as needed. The inspections resulted in **127** repairs, **37** replacements and **32** new inlet protection devices were installed at City facilities.

**Gravity Storm Sewer Maintenance**: The storm drain system needs routine cleaning and repair to reduce the amount of pollutants, trash and debris entering water bodies, and to prevent and remove clogs that may cause a storm drain to overflow. The City inspects drainage pipes each year to schedule necessary cleaning and repairs. The implementation activities for storm drain cleaning include:

- Annually inspecting 100 miles of underground storm drain piping with remote cameras;
- Recording the damaged areas;
- Scheduling system maintenance and repairs; and
- Removing debris.

The City inspected **177** miles of stormwater sewer drainage piping using cctv cameras during the reporting period. The City uses the cctv inspections to identify damaged pipes, debris blockages, and other potential problems. The cctv inspections identified **63** damaged pipe areas that require repair. As of September 30, 2012, **61** areas have been repaired; repairs are pending in the remaining **2** areas. The City removed about **12,932** cubic yards of material from the storm sewer pipes annually.

The City received **469** creek/culvert maintenance requests as of September 30, 2012, **451** have been repaired; repairs are pending on the remaining **18** areas; no culvert replacements were required.

**Pressure Sewer System Maintenance:** The City inspects six (**6**) pressure sewer systems after each rain event. During the reporting period, the City performed **200** visual inspections of the 3.7 mile long pressure sewer system. The six (**6**) identified pressure sewers systems that are regularly maintained by the City include: Belview, Coombs Creek, Dallas Branch, Lake Cliff, Turtle Creek and Woodall Rodgers. The results of these pressure sewer system inspections are used to prioritize maintenance. Maintenance and cleaning activities include removing debris and silt. During reporting period, records indicate that **191** repairs were completed.

**Street Pump Stations Inspections and Maintenance:** The City monitors nine (**9**) street sump locations on a weekly basis. During the reporting period the City performed **1,447** visual street sump inspections. The nine (**9**) identified street sumps that are regularly maintained by the City include: Bexar, Farmers Market at Central, Farmers Market at Pearl, Hi-Line, Lamar, and Municipal at Budd, Reunion Avenue, Second Avenue, and the Cole Park Vault. The results of these street pump station inspections have been used to prioritize maintenance. Maintenance and cleaning activities included removing debris and silt from the wet wells using vacuum truck. During reporting period, records indicate that **302** repairs were completed.

Table 1-A.1 summarizes the street pump station maintenance activities by location.

**Table 1-A.1 Street Pump Station Maintenance Activities**

| Name of Street Pump Station | Location | No. of Pump Inspections | No. of Pump Motor Inspections |
|---|---|---|---|
| Bexar | 5800 Bexar | 55 | 43 |
| Farmers Market at Central | 200 S. Central Expressway | 54 | 43 |
| Farmers Market at Pearl | 1300 S. Pearl | 54 | 43 |
| Hi-Line | 1500 Hi-Line | 54 | 43 |
| Lamar | 2500 Lamar | 55 | 43 |
| Municipal at Budd | 2311 Wells | 55 | 43 |
| Reunion | Reunion @ Hotel Street | 55 | 43 |
| Second Avenue at Illinois | 5200 Second Avenue | 54 | 43 |
| Cole Park Vault | 3110 Cambrick | 54 | 43 |
| | **TOTALS:** | **490** | **387** |

***During the reporting period a total of 12,932 cubic yards of debris was removed from inlets, storm drainage pipes, pressure sewers and street pump stations.***

### A (1) b - Water Quality Structures

The City currently maintains stormwater sumps, levees, storm drain inlets, detention and retention ponds, creeks, and drainage channels in the permit area. Routine or scheduled inspections and maintenance of these water quality structures reduces repairs, pests, flooding, and pollutants.

**Levee/Dallas Floodway Inspections and Maintenance:** The City maintains ten (**10**) pump stations and thirteen (**13**) sump areas along the 33-mile long Trinity River levee system. These maintenance activities include:

- Visually inspecting each of the thirteen (**13**) identified sump areas, including pump stations and trash racks, monthly and after each significant storm event;

- Cleaning trash racks after rain events, as needed;
- Cleaning the sumps by removing litter, mowing, and managing vegetation to ensure adequate access to the appropriate structures of the ponds; and
- Excavating sediment and periodically removing woody debris that clogs the structures.

**Pump Station and Sump Inspections:** The City regularly maintains the following pump stations, and their adjacent sumps: Able (large and small), Old/New Baker, Charlie, Delta, Old/New Hampton, Pavaho, and Rochester. The City is nearing completion of the New Pavaho pump station that will become operational in PY2. Program activities also include maintaining three additional sump areas: Eagle Ford, Frances Street, and Trinity Portland/ Nobles Branch.

The City monitors the sumps on a regularly scheduled basis, and after each rain event. During the reporting period, **1,713** visual sump inspections were conducted of the sump, associated pump stations, and trash racks. The results of these sump inspections have been used to prioritize maintenance.

Sump area maintenance and cleaning activities included de-silting pilot channels, mowing, providing sump rehabilitation, removing drift and illegally dumped materials, and cleaning trash rack grates. The City performed **490** sump and **384** pump station inspections in during the reporting period. A total of **29,790** cubic yards of debris and silt were removed from the sump areas. Of this volume, **20,244** cubic yards were specifically associated with pump station maintenance. Other pump/sump maintenance activities included mowing of over **29,670** acres within sump areas. Table 1-A.2 provides a summary of the materials addressed through the pump station maintenance activities (by location).

**Table 1-A.2 Sump Area and Pump Station Maintenance Activities**

| Sump Areas and Pump Stations | Mowing cycles | Pump Station Inspections | Volume of Material Removed (Cubic Yards) | | |
|---|---|---|---|---|---|
| | | | De-silting Pilot Channels | Grate Cleaning | Total |
| Able (large & small) | 9 | 68 | 1082 | 756 | 1,838 |
| Old/New Baker | 9 | 76 | 2045 | 786 | 2,831 |
| Charlie | 9 | 65 | 699 | 411 | 1,110 |
| Delta | 9 | 53 | 224 | 421 | 645 |
| Old/New Hampton | 9 | 77 | 12,537 | 816 | 13,353 |
| Pavaho | 9 | 30 | 0 | 71 | 71 |
| Rochester | 9 | 15 | 0 | 12 | 12 |
| Eagle Ford | 9 | NA | 384 | NA | 384 |
| Frances Street | 9 | NA | 0 | NA | 0 |
| Trinity Portland/ Nobles Branch | 9 | NA | 0 | NA | 0 |
| **TOTAL** | **117** | **384** | **16,971** | **3,273** | **20,244** |

**Levee Maintenance Activities:** The City visually inspects the levee system at least monthly, and conducts erosion repairs as needed. Other maintenance activities included mowing, litter removal, vegetation management and maintaining levee access. The City conducted **44** levee inspections, completed **43** erosion repairs, mowed **29,670** acres, and ***removed 251,847 cubic yards of litter and vegetative debris***.

**Retention and Detention Facility Inspections and Maintenance:** During 2011, the City initiated a basin and pond inventory in support of the MS4 permit renewal application process. The draft inventory used to support the permit renewal application indicated a total of **55** water bodies managed by the City of Dallas. The final pond inventory identified a total of **263** water bodies located in/on City properties, however, a majority of these ponds are incidental to golf courses and riparian parks in a natural setting, and regular maintenance would not be warranted. Regular inspection of all ponds identified is anticipated during each five year permit period.

During the reporting period, the City maintained flood control capacity and water quality for thirteen regional detention/retention ponds. A total of **95** inspections were performed at these 13 facilities during the reporting period. City staff performed regular maintenance inspections on these ponds and basins. The basins are visually inspected using a checklist to identify potential maintenance issues such as trash or debris build-up, erosion, water quality concerns, odor, and excessive sedimentation. The City performed routine maintenance activities for each of the detention/retention areas including de-silting, debris removal, and mowing. Detention/retention pond maintenance activities included removing **345** cubic yards of debris and silt and mowing **145** acres. These volumes are summarized in Table 1-A.3.

**Table 1-A.3 Retention/ Detention Pond Maintenance Activities**

| Name of Detention/Retention Basin/ Pond | No. of Inspections | Acres Mowed | Cubic Yards of Debris Removed |
|---|---|---|---|
| **SWMP Identified Facilities** | | | |
| Acres Detention Basin | 6 | 43 | 88 |
| Bent Creek Detention Basin* | 0 | 0 | 0 |
| Cherry Brooke Detention Basin | 3 | 3 | 12 |
| Hatfield Detention Basin | 1 | 0 | 144 |
| Lone Star Detention Basin | 1 | 2 | 0 |
| Municipal/Budd Street Basin* | 0 | 0 | 0 |
| Whispering Oaks Detention Basin | 2 | 4 | 0 |
| Boulder Park | 2 | 6 | 0 |
| Grady Basin* | 0 | 0 | 0 |
| Las Villas | 3 | 4 | 12 |
| Skillman Relief | 1 | 0 | 60 |
| Abrams Catch Basin | 2 | 0 | 24 |
| Bent Creek Basin | 74 | 83 | 5 |
| **TOTAL** | **95** | **145** | **345** |

***** Basin cleaned at end of PY5

**Creeks and Drainage Channels**: The City responds to complaints concerning the illegal disposal of materials that could potentially degrade the water quality in creeks and channels. During this reporting period the City removed debris blockages from earthen creeks, bridges, and concrete-lined channels. The City received **364** creek/culvert blockage requests, and **266** calls concerning the water quality in creeks and channels. Through response to these requests, the City removed a total of **24,234** cubic yards of debris and mowed **52** acres.

**Fish Kill Response:** The City also responds to fish kills that can occur with abrupt changes in temperature, long hot dry periods, and other system disturbances. Each incident response includes an evaluation of the condition of the

recovered fish, the number type and size of fish, local water quality, and an investigation of channel and drainage conditions in- and around the site where the dead fish were identified. Incidents with more than 50 fish mortalities are reported to Texas Parks and Wildlife (TPWD) and the TCEQ. City staff responded to 16 fish kills during this reporting period; most events were attributed to the summer drought conditions. Table 1-A.4 includes a summary of fish-kills that the City responded to during the reporting period.

**Table 1-A.4 Fish Kill Responses**

| Subwatershed | Address | Initial Response Date | Number of Fish Mortalities |
|---|---|---|---|
| Upper Bachman Creek | 9600 Inwood | May 18, 2012 | 50 |
| | 5915 Deloache | June 3, 2011 | 200 |
| | 10300 Gaywood | July 8, 2011 | 350 |
| | 9800 Rockbrook | August 15, 2011 | 166 |
| Joe's Creek | 3804 Elfland CIrcle | July 1, 2011 | 200 |
| Upper/Middle White Rock Creek | 6230 Preston Creek | April 5, 2012 | 175 |
| | 18550 Ling | May 11, 2012 | 449 |
| | 6327 Pineview | July 12, 2012 | 265 |
| | 5800 Preston Oaks | August 2, 2011 | 300 |
| | 7431 Campbell Road | August 20, 2011 | 682 |
| | 7147 Brookshire | August 25, 2011 | 342 |
| White Rock Creek Dam | 6439 Lange Circle | August 5, 2012 | 150 |
| Dallas East Bank | 1900 S. Riverfront | August 15, 2011 | 40 |
| | 2255 Irving Boulevard | August 15, 2011 | 114 |
| Dallas West Bank | 3801 Turtle Creek | July 5, 2012 | 315 |
| Upper Five Mile Creek | 6801 Talbot | May 7, 2012 | 3,186 |

**Stormwater Interceptor Program:** Stormwater interceptors remove captured materials and floatables from the storm drainage system. Regularly inspecting, maintaining and cleaning the in-line stormwater interceptors prevents system failure, backup, vectors, overflow, odors and other biochemical reactions from occurring. The City inspects and maintains **137** in-line stormwater interceptors that serve City facilities. Interceptor maintenance activities include periodic inspections and cleanings. In the reporting period the City conducted **1,935** inspections, completed **745** cleaning events and removed approximately **194,694** gallons of stormwater runoff containing debris from the interceptors.

During the reporting period, seven (**7**) new stormwater interceptors were added to the program: **1** at the Northwest Service Center, **3** at Love Field Airport and **3** at the Executive Airport.

Table 1-A.5, on the following page, provides a summary of the current stormwater interceptor inventory.

| Table 1-A.5 Stormwater Interceptor Inventory | | |
|---|---|---|
| **Service Center** | **Address** | **Number of Interceptors** |
| Southeast Service Center | 2761 Municipal, 75215 | 11 |
| Southwest Service Center | 2411 Valleria, 75211 | 7 |
| Police Auto Pound | 1955 Vilbig Road, 75208 | 10 |
| Northwest Service Center | 9809 Harry Hines Blvd, 75220 | 4 |
| Central Service Center | 3111 Dawson Street, 75226 | 5 |
| Northeast Service Center | 8935 Adlora Lane, 75238 | 6 |
| Salvage Yard at Hensley Field | 501 Leatherneck Drive 75211 | 1 |
| Make Ready Facility at Hensley Field | 501 Leatherneck Drive 75211 | 1 |
| Dallas Zoo | 650 R.L. Thornton Freeway, 75206 | 23 |
| North Central Service Center | 6969 McCallum Boulevard, 75252 | 1 |
| Fire Stations | Various Locations | 51 |
| Turtle Creek Effluent Capture | Turtle Creek Boulevard from Fitzhugh to Fairmont, 75219 | 10 |
| Executive Airport | 5303 Challenger Dr. Unit 17, 75237 | 3 |
| Love Field Airport | 8008 Cedar Springs Road, 75235 | 3 |
| | **TOTAL:** | **137** |

**A (2) Floatables**

The City uses a variety of activities to: *"reduce the discharge of floatables (e.g., litter and other human generated solid refuse) into the MS4. The permittee shall include source controls and, where necessary, structural controls and other appropriate controls where necessary* [Part III.B.2.a.ii of TPDES Permit No. WQ0004396000]." Floatables form the most visible indication of man-made pollution to surface water. The City has implemented a multi-faceted floatables program to address this issue. In addition to structural controls such as inlets and trash racks, the City also uses litter booms, special event litter protection, and litter abatement programs to reduce the discharge of floatables into the MS4. These measures augment an aggressive regional media campaign that is a part of the Public Education, and Outreach program (MCM 7).

**A (2) a - <u>Litter Booms</u>**

The City maintains, monitors and cleans three (3) litter booms, one each at Bachman Lake, Williamson Branch Creek at White Rock Lake, and at Lake Cliff Park. Monthly monitoring, routine inspections, and regular maintenance (twice per year at a minimum) and cleaning of the litter booms prevents debris from entering the MS4. Each site includes a litter boom that floats at or near the water surface and extends across the width of the creek to trap floating materials. The City regularly monitors the condition of each boom. As needed, each site is cleaned when the areas adjacent to the booms allow equipment access without damaging the adjacent shoreline. Activities under this SCM include monitoring, removing debris, and assessing the types and volume of debris collected. These data are then used to focus outreach efforts in and near these facilities.

- **Bachman Greenbelt near Bachman Lake** is located near 3700 Northwest Highway at Lemmon Avenue, about 100 feet from the neighborhood outfall and 2.0 miles from the dam for the lake. The litter boom diverted **505** cubic yards of debris from entering the dam. There is a large park surrounding this lake, with several picnic and barbeque areas.
- **Williamson Branch at White Rock Lake**: The litter boom is located near 3800 West Lawther Drive on Williamson Branch, just upstream of White Rock Lake. The two main sources of litter and debris identified for White Rock Lake were rain events and public events held at the Lake. Public events at White Rock Lake include holiday picnicking, athletic events and fun runs. City staff performs the cleanups after these events. A deposit charged for public events at the lake promotes proper disposal of trash. The City promotes the reduction of illicit discharges and improper disposal at parks using campaigns that target the specific age groups and organizations that use the park facilities most. During the reporting period, the litter boom at Williamson Branch diverted **23** cubic yards of debris from entering White Rock Lake.
- **Lake Cliff Park in Oak Cliff**: A litter boom is also placed at Lake Cliff Park in Oak Cliff, near 300 E. Colorado Boulevard. The litter boom is located at the northwest corner of the Lake and prevented 25 cubic yards of debris from entering the Trinity River. The boom at Lake Cliff Park captures litter, debris and other floatables from vegetation, and from weekend activities at the park.

*Figure 1-1: The Bachman Lake litter boom.*

**Table 1-A.5,** summarizes the number of inspection and maintenance activities conducted and the associated volume of floatable debris removed during the reporting period.

| Table 1-A.6 Litter Boom Activities | | |
|---|---|---|
| **Location** | **Number of Inspection & Maintenance Events** | **Volume of Debris Removed (Trash, Logs, and Leaves)** |
| Lake Cliff Park in Oak Cliff | 63 | 25 cubic yards |
| Williamson Branch Creek at White Rock Lake | 32 | 23 cubic yards |
| Bachman Greenbelt near Bachman Lake | 19 | 505 cubic yards |
| **TOTALS:** | **114** | **553 cubic yards** |

**A (2) b - <u>Special Event Floatables Protection</u>**

During the last Permit term, the City initiated a new program to provide floatables protection for parades and other special events with high levels of anticipated pedestrian activity, and associated litter. Event examples include: the Martin Luther King Day Parade, the St. Patty's Day Parade and the NBA Mavericks Championship Celebration and Parade.

The special events litter mitigation effort includes marking the inlets in the vicinity of the event to raise awareness of litter prevention. Immediately preceding the event, bio-logs (filter "socks") are placed against the length of the inlets along the route. Following the event and subsequent street sweeping, the inlet protection is removed and stored for another occasion. Each event is evaluated with respect to implementation ease, waste captured and overall effectiveness; necessary program adjustments are made on the following event.

An example of the effectiveness of this newly instituted program was the Dallas Mavericks Championship Parade, held June 16, 2011. On June 12, 2011, within 4 days of the Mavericks NBA championship, the championship parade was scheduled, parade route evaluated, 58 temporary inlet protection bio-logs installed and removed post parade cleanup diverting **9** tons of litter from entering the stormwater drainage system. Figure 1-2, below, illustrates the effectiveness of reducing floatables from entering the storm drainage system during public events. This BMP has been found to be a very effective way of preventing literally tons of floatable material from entering the storm drainage system.


*Figure 1-2: Special event Inlet protection: Dallas Maverick's Championship Parade, June 16, 2011.*

### A (2) c - Litter Abatement

The City has implemented a fairly robust local and regional litter abatement program, through focused local clean-ups, benchmarking of progress, and a regional anti-litter campaign. Lake Ray Hubbard is owned by the City of Dallas for municipal water supply, and is included in the defined MS4 area; however, the contributing drainage area is not in within the city jurisdiction. In April, 2012, the Dallas Water Utilities (DWU) department pulled over **749** tons of floatable material and debris out of Lake Ray Hubbard. This cleanup was in response to numerous complaints from the neighbors that live within the contributing drainage area. The City of Garland also removed **9** tons of material from Rowlett Creek adjacent to the Lake Ray Hubbard during this spring cleanup effort.

- **Operation Beautification – Focused Neighborhood Cleanups**: The Strategic Customer Services Department launched "Operation Beautification" on May 19, 2012. This program focuses on working with local neighborhood groups to facilitate stewardship and cleanup of areas with chronic litter complaints. Geographic Information System (GIS) mapping of litter complaints from the CRMS system was used to prioritize areas for cleanup. The SCS staff identified local groups to take the lead on this City-wide cleanup effort. Twenty-four (24) neighborhoods participated and picked up about **10** tons of litter and debris during this effort. The success of this initial effort led to plans to implement this event twice a year (spring and fall), moving forward.

- **Litter Survey and Benchmarking**: Each year Keep Dallas Beautiful, an affiliate chapter of Keep America Beautiful, implements standard roadside surveys of litter, junk cars, and graffiti, in order to bring attention to the problem, and to help focus education efforts. Performing these standardized surveys across the United States allows benchmarking against other comparable U.S. Cities with respect to local conditions. The surveys can be conducted over time to assess effectiveness of follow-on abatement activities. Dallas partnered with Keep Dallas Beautiful to conduct these surveys of selected representative roadways and stream segments in four quadrants of the City and the central business district in early May, 2012. The results were provided to the City departments that provide related code enforcement and cleanup activities, and were used to justify and guide media campaigns and education.

- **Reverse Litter Media Campaign**: The City has also partnered with the Tarrant Regional Water District (TRWD), as well as the Cities of Fort Worth, Arlington, and Denton to implement a comprehensive regional media campaign to "reverse litter". The three year campaign begins in October, 2012 and focuses on transition spots such as bus stops, and other areas with significant pedestrian activity, and includes kiosks, busses, media advertising, etc.

## A (3) Roadways

This section summarizes the City's activities that address the Roadways' permit requirement to: "*operate and maintain public streets, roads, and highways to minimize the discharge of pollutants, including pollutants related to deicing or sanding activities"* [Part III.B.2.a.iii of TPDES Permit No. WQ0004396000]." A regular program of efficient and effective roadway maintenance contributes to limiting the discharge of pollutants to the MS4. Street sweeping can be used to limit particulate dust, floatables, sediment and other pollutants from entering into the MS4. Street sweeping can also help limit the volume of litter, bacteria leaf and yard wastes that are washed into the storm drains. Winter sweeping is used to address the residuals from deicing activities.

### A (3) a - Street Sweeping

The City prioritizes sweeping in high vehicular use areas, higher pedestrian traffic areas downtown, and City-owned parking lots. The City's road maintenance program includes street sweeping for **234** miles of designated

prime network roads on a monthly basis, and sweeping within the Central Business District five nights a week. Other sweeping events are conducted as-needed to address inclement weather or customer service requests. The City swept a total of **39,782** gutter miles of prime network roads during the reporting period removing **12,199** cubic yards of material from the prime network roads, and **3,834** cubic yards of debris from Central Business District streets. This prevented a total of **16,033** cubic yards of debris from entering the storm drains. The program was assessed during the process of updating the SWMP. No revisions were recommended at this time.

### A (2) b -Deicing

The City did not experience weather events during the permit reporting period that resulted in the deployment of deicing material. Because of this, it was not possible to evaluate deicing methods/procedures.

### A (2) c - Road and Bridge Maintenance Program

The City's Street Services Department manages the road and bridge maintenance activities and associated best management practices (BMPs). This Department is an ISO 9001-Quality Management System registered organization that practices repeatable and consistent processes to complete all work activities. Street Services has a work process flow that requires the systematic completion of daily activities for each road and bridge maintenance project including completing the BMPs assigned to each projects' maintenance activity. For the **1,551** road and bridge maintenance projects completed during the reporting period **4,544** inlets were protected, **1,010** linear feet of silt fence and **1,221** square yards of sod were installed, and **one (1)** project required a construction entrance.

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| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **A (1) Structural Controls** | | | |
| **A (1 ) a - Conveyance System Repair and Maintenance** | | | |
| ***Gravity Storm Sewer System Maintenance*** | | | |
| 3. Inspect underground gravity storm drainage piping through cctv televiewing. | Miles of pipe inspected | Permit Year (PY) 1 - PY5 | **177** miles of storm sewer inspected |
| 4. Record the damaged storm drain piping areas and schedule maintenance. | # of pipe areas scheduled for maintenance | PY1 - PY5 | **63** areas required repair |
| | # of repairs completed | PY1 - PY5 | **61** repairs completed; **2** repairs scheduled |
| 3. Remove debris from storm drain system. | Volume of debris removed in CY | PY1 - PY5 | **12,932** cubic yards of debris removed inlets, storm sewers, culverts, pressure storm sewers and street pump stations |
| 5. Investigate roadside ditches and culverts through service requests | # of ditch and culvert maintenance requests | PY1 - PY5 | **469** ditch and culvert maintenance requests received |
| 5. Repair and maintain City-owned roadway culverts | # number and type of roadway culverts repaired | PY1 - PY5 | **451** ditch and culvert repairs completed |
| | # of culvert replacements | PY1 - PY5 | No culverts required replacement during reporting period |
| | Volume of debris removed in CY | PY1 - PY5 | *Included in A.1.a.3 Storm Drain system debris removal* |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| ***Pressure Sewer System Maintenance*** | | | |
| 1. Inspect 6 pressure sewer systems including pump station & outfall at least twice per year | # of pressure sewer system inspections | PY1 - PY5 | **200** pressure sewer system inspections conducted |
| 2. Maintain pressure sewer system | # of maintenance activities performed | PY1 - PY5 | **191** repairs completed |
| | Volume of debris removed in CY | PY1 - PY5 | *Included in A.1.a.3 Storm Drain system debris removal* |
| 3. Inspect 9 street pump stations, including pump station & outfall at least twice per year | # of Street Pump Station inspections | PY1 - PY5 | **1,447** street pump station inspections conducted |
| 4. Maintain street pump stations | # of cleaning & repair activities performed | PY1 - PY5 | **302** cleaning or repairs completed |
| | Volume of debris removed in CY | PY1 - PY5 | *Included in A.1.a.3 Storm Drain system debris removal* |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **A (1) b - Water Quality Structures** | | | |
| ***Levee/Dallas Floodway Inspections & Maintenance*** | | | |
| 3. Maintain thirteen (13) identified sump areas by:<br>a) Visually inspecting each sump area, including pump stations and trash racks, at least twice a year; | Sump inspections performed | Permit Year (PY) 1 - PY5 | **490** sump inspections/ **384** pump stations conducted |
| b) Cleaning trash racks after rain events, as needed; | # of trash rack inspections/pump station | PY1 - PY5 | **1,713** pump station trash rack inspections |
| | Volume of debris removed from trash racks in CY | PY1 - PY5 | **3,508** cubic yards of debris removed |
| c) Cleaning the sumps by de-silting, removing litter and woody debris, mowing, managing vegetation to ensure access to structures, and excavating sediments, as needed. | # of maintenance activities per sump in CY | PY1 - PY5 | **45** sump cleaning<br>**51,729** cubic yards of debris removed |
| | Area cleared and types of vegetative management performed | PY1 - PY5 | **29,670** acres mowed |
| | Volume of materials removed during maintenance activities in CY | PY1 - PY5 | **251,847** cubic yards of debris removed |
| 4. Maintain levees by:<br>a) Visually inspecting each levee at least twelve times | # of visual inspections conducted (entire length) | PY1 - PY5 | **44** visual levee/floodway inspections conducted |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| b) Conducting erosion repair, as needed | # of erosion repairs by levee | Permit Year (PY) 1 - PY5 | **43** erosion repairs completed |
| c) Removing litter, mowing, managing vegetation, and maintaining levee access as needed | # of acres mowed (entire system) | PY1 - PY5 | # of acres included with Levee maintenance in 1(c) |
| | Volume of litter and debris removed in CY | PY1 - PY5 | Volume removed is included in debris removed with Levee maintenance in 1 (c) above |
| ***Inlet System Inspections & Maintenance*** | | | |
| 1. Conduct 12,000 inlet inspections within the City's jurisdiction | Types and locations of inlets inspected | PY1 - PY5 | **30,692** inlets inspected |
| 2. Clean and repair inlets as necessary. Inlet cleaning and repair activities include:<br>a) Cleaning inlets by removing material(s) | Number, type, and locations of inlets cleaned | PY1 - PY5 | **18,600** inlets cleaned |
| | Volume of material removed from inlets in CY | PY1 - PY5 | *Included in A.1.a.3 Storm Drain system debris removal* |
| c) Repairing damaged inlets | Number, type(s) and locations of inlets repaired | PY1 - PY5 | **34** inlets repaired |
| 3. Inspect inlet protection devices at City-owned facilities | # of devices inspected | PY1 - PY5 | **571** inlet protection devices inspected quarterly |
| | # Repairs/device replacements completed | PY1 - PY5 | **127** inlet protection devices were repaired; **37** replaced |
| | # New devices installed | PY1 - PY5 | **32** new inlet protection devices were installed |
| | Volume of material removed from inlet protection devices | PY1 - PY5 | *Included in A.1.a.3 Storm Drain system debris removal* |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| ***Retention/Detention Facility Inspections & Maintenance*** | | | |
| 1. Inspect at least ten (10) City-owned retention/detention ponds per year and each pond at least once during the permit term. | # of Ponds inspected | Permit Year (PY) 1 - PY5 | **40** pond inspections conducted on 13 ponds |
| 2. Maintain the flood control capacity and water quality efficacy of City-owned detention/retention ponds. | Number and type of pond maintenance activities performed (de-silting, litter removal, etc) | PY 1 - PY 5 | **40** maintenance activities completed |
| | Volume of materials removed in CY | PY 1 - PY 5 | **2,798** cubic yards of debris removed |
| ***Creek/Channel Maintenance*** | | | |
| 3. Respond to creek and channel maintenance requests | Number and type(s) and creek and channel maintenance requests | PY 1 - PY 5 | **158** External service requests<br>**71** Internal maintenance request<br>**229** total service request |
| 4. Maintain the flood control capacity and water quality efficacy of City-owned creeks and channels | Number of locations with dredging/ de-silting performed | PY 1 - PY 5 | **229** creek/channel maintenance requests completed |
| | Miles of channel with vegetated buffer management | PY 1 - PY 5 | **55.2 miles** of vegetative buffer management along creeks and channels |
| | Volume of materials removed from City-owned waterways in CY | PY 1 - PY 5 | **24,234** cubic yards of debris removed<br>**52** acres mowed |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| 3. Respond to service requests related to surface water quality | Number, Type(s) and locations of water-quality related response activities performed | Permit Year (PY) 1 - PY5 | City responded to **289** water quality service requests |
| 4. Investigate cause and effect for service requests related to Fish Kills | Number of Fish-kill investigations performed | PY 1 - PY 5 | **16** investigations |
| | Number of reported Fish-kills with more than 50 identified fish/wildlife mortalities | PY 1 - PY 5 | **15** reportable fish-kill events |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| ***Stormwater Interceptor Program*** | | | |
| 1. Inspect the City-owned in-line stormwater interceptors. | # of Interceptor inspections performed | Permit Year (PY) 1 - PY5 | **1,935** interceptor inspections conducted |
| 2. Clean the City-owned in-line stormwater interceptors. | # of Cleaning events performed | PY1 - PY5 | **745** interceptor cleaning |
| | Volume of material removed in CY | PY1 - PY5 | **194,694** gallons of stormwater runoff containing debris was removed |
| 3. Update inventory of the City-owned in-line stormwater interceptors. | # of Interceptors added to City system | PY1 - PY5 | **7** interceptors were added to the system |
| **A (2) Floatables** | | | |
| ***A (2) a - Litter Booms*** | | | |
| 3. Inspect litter booms for trapped materials, at least two (2) times per year. | # of Litter boom inspections performed | PY1 - PY5 | **144** Litter boom inspections conducted |
| 4. Remove, dispose, and recycle if possible, collected materials. | Volume of floatables collected and disposed in CY | PY1 - PY5 | **553** cubic yards of debris was removed |
| ***A (2) b - Special Events Floatable Protection*** | | | |
| 2. Prevent floatables from entering the storm drainage system during special events | # of events where litter intervention is provided | PY1 - PY5 | **7** events utilized litter intervention inlet protection |
| | # of inlets protected | PY1 - PY5 | **318** inlets were protected |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| | Volume of debris from related street cleaning/disposal in tons | Permit Year (PY) 1- PY5 | Estimated at **18** tons of litter |
| ***A (2) c - Litter Abatement*** | | | |
| 4. Perform a bi-annual review of the City litter/floatables program, and identify any necessary opportunities for improvement | # of reviews, and recommendations made | Permit Years 1, 3 and 5 | Litter programs across multiple departments reviewed; three (**3**) recommendations made/implemented:<br>• Implement Operation Beautification neighborhood cleanups<br>• Participate in KDB Litter Survey<br>• Participate in Regional Reverse Litter Campaign |
| 5. Participate in local and regional litter abatement programs (eg, TREES, Keep Dallas Beautiful, Trinity Trash Bash, etc) | # of events participated in by City staff | PY1- PY5 | Three events:<br>• Lake Ray Hubbard Cleanup<br>• KDB Litter Survey<br>• Operation Beautification |
| 6. Retrieve Litter and floatables litter abatement activities | Volume of Debris collected in tons | PY1- PY5 | Approximately **760** tons from Lake Ray Hubbard, and Operation Beautification |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **A (3) Roadways** | | | |
| ***A (3) a - Street Sweeping*** | | | |
| 1. Sweep the prime network roads twelve (12) times per year. | Total gutter miles of prime network roads swept | PY1- PY5 | **39,782** miles of prime network roads swept |
| | Volume of debris collected from prime network roads in CY | Permit Year (PY) 1 - PY5 | **12,199** cubic yards of debris removed from prime network roads |
| 2. Sweep the Central Business District five times a week and other areas, as needed. | Total gutter miles swept in the Central Business District and other areas | PY1 – PY5 | **234** Central Business District gutter miles swept 5 times per week |
| | Volume of debris collected from the Central Business District and other areas in CY | PY1 – PY5 | **3,834** cubic yards of debris removed from Central Business District roads |
| 3. Evaluate the efficacy of the street sweeping program. | Program evaluation completed. | Permit Years 1, 3 and 5 | Program evaluated as part of SWMP development; no changes recommended at this time. |

| Table A-1<br>Summary of Performance: MCM 1- MS4 Maintenance Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| ***A (3) b - Deicing*** | | | |
| 1. Sweep the streets where deicing materials have been applied to icy patches. | # of icing events | Permit Year (PY) 1 – PY5 | **0** there were no icing events during the reporting period |
| | Total gutter miles treated | PY1 – PY5 | **0** gutter miles treated |
| | Total treated gutter miles swept | PY1 – PY5 | **0** treated gutter miles swept |
| 2. Evaluate availability and feasibility of innovative deicing techniques | Program evaluation completed | Permit Years 1, 3 and 5 | **0** reviews performed; no deicing products were deployed to allow evaluation |
| ***A (3) c - Road and Bridge Maintenance Program*** | | | |
| Incorporate temporary or permanent SCMs to reduce pollutants from routine maintenance activities for roads and bridges:<br>f) Temporary inlet protection<br>g) Erosion control measures (e.g., silt fence, re-vegetative measures, soil stabilizing matting, etc.),<br>h) Rock berms or check dams,<br>i) Stabilized construction entrances, and/or<br>j) Work area dewatering measures. | Number, type and location of SCMs implemented | PY1 – PY5 | **1,551** road and bridge maintenance projects were completed during reporting period<br>**4,544** inlets were protected<br>**1,010** feet of silt fencing were installed<br>**1,221** square feet of sod were installed<br>**1** construction entrance was installed |

# *MCM/ Element 2 - Post Construction Stormwater Control Measures*

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## B. MCM 2: Post - Construction Stormwater Control Measures

This section describes the City's measures to implement: "*a comprehensive master planning process (or equivalent) to develop, implement, and enforce controls to minimize the discharge of pollutants from areas of new development and significant redevelopment after construction is completed. The goals of such controls shall include: a. New development - limiting increases in the discharge of pollutants in storm water as a result of development; and b. Redevelopment – reducing discharges of pollutants in storm water* [Part III.B.2.b.i-iii of TPDES Permit No. WQ0004396000]."

This element also includes "*evaluation of flood control projects with respect to potential impacts to receiving waters*", and "*the design, construction and maintenance of new flood control structures to provide erosion prevention and pollutant removal from stormwater*" [Part III.B.2.b.iv of TPDES Permit No. WQ0004396000].

The activities under this element include implementing an Integrated Stormwater Management (iSWM) planning and design process, Dallas City Code updates relative to sustainable design, evaluating flood control projects for water quality opportunities, and evaluating performance of low-impact development (LID) and green infrastructure controls to mimic pre-development hydrologic response, and/or provide passive water quality treatment.

- **Status of Implementing the SWMP**: With the exception of fully expanding requirements for post-construction controls to apply to all sites greater than one acre in size, all measures proposed in the SWMP for PY1 are fully implemented per the compliance schedule, and are functioning as intended to prevent the discharge of pollutants to the MS4 to the MEP. Significant progress has been made with respect to implementing a comprehensive post-construction controls process; however, implementing fundamental design changes in a thoughtful, meaningful way without the availability of standard specifications or design details can often take longer than anticipated. A description of program activities related to Post Construction Controls and Flood Control Projects follows. Table B-1 at the end of this section provides a summary of activities completed during the reporting period.
- **Proposed Changes to the SWMP for the next Reporting Year**: With the exception of completing the PY1 task to expand the requirements for post-construction controls, the City has reviewed the BMPs within this MCM for effectiveness; there are no other changes to the SWMP proposed at this time.
- **Number and Nature of Enforcement Activities**: Not applicable.

### B (1) Areas of Development and Significant Re-Development

Stormwater discharges from new development and redevelopment sites have the potential to degrade water quality from soil disturbance associated with construction, or from increased runoff resulting from an increase in impervious surface cover. Stormwater control measures addressing post-construction discharges incorporate several different approaches to maintain and/or improve water quality.

Related new development and significant development activities include continuing implementation of the integrated Stormwater Management (iSWM) planning and design process and other sustainable design methods, related Dallas City Code updates, and evaluating the performance of low impact development (LID) and green infrastructure controls to mimic pre-development hydrologic flow conditions, and/or provide passive water quality treatment.

**B (1) a - *Implement Comprehensive Master Planning Process for New and Redevelopment Projects***

The City is working towards full implementation of a Comprehensive Master Planning Process for new development and significant redevelopment projects on several different fronts that are all consistent with the Dallas Common Vision Plan. A summary of the status of these efforts follows:

- **Integrated Stormwater Management (iSWM):** The City of Dallas continues to pursue adoption and implementation of the local provisions to the NCTCOG iSWM Manual. The City Council approved use of the NCTCOG iSWM Manual for voluntary use in December 2009. In the summer of 2011, the City of Dallas convened an iSWM Task Force comprised of engineers, architects, landscape architects, developers and policy-makers to further the iSWM initiative through development of draft policy and the necessary engineering design standards to support full implementation. However, after several iSWM Task Force meetings, the group recommended pursuing an iSWM Design Competition to accelerate the speed at which iSWM practices are accepted and implemented in North Texas. The City worked with the NCTCOG, the North Texas Land and Water Forum, the EPA and the Cities of Arlington and Fort Worth to implement the Design Competition in early PY2.

- **Regional LID/iSWM Design Competition**: Registration for the Regional Low Impact development (LID)/iSWM Design Competition closed in August, 2012, with 20 entries representing 55 top design firms from North Texas and U.S. EPA Region 6. The teams are competing to demonstrate best practices and most cost-effective iSWM techniques as applied to four mixed use demonstration projects located around the metroplex. In September 2012, a panel of expert judges narrowed the field to nine finalist teams. The Design Competition Finals Event will be held on November 7, 2012. The City of Dallas anticipates that the contest will demonstrate both technical practicality and economic feasibility of this type of design to both the local design and development community. The lessons learned from the competition will be used to guide development of the local provisions of NCTCOG's iSWM Manual for use in Dallas.

- **Complete Streets Initiative:** The City's Planning and Sustainable Development Department, along with the City Design Studio have been working on developing and implementing a Complete Streets Initiative, to successfully incorporate higher density landuses, multi-modes of transportation, and stormwater quality enhancement measures into the standardized roadway design template. The Draft guidance was developed in September, 2012, and it is anticipated that this guide will be finalized and used to implement several projects identified as a part of the 2012 Municipal Bond Program during PY2.

- **Design Standards Update:** The City uses the NCTCOG Regional Standard Construction Specifications and Standard Construction Details (commonly known as the "251D Drawings") to support construction projects in Dallas. With the other planning and design methodology updates related to implementing a more sustainable design approach, it became apparent that these standards have not been updated within the last 20 years, and did not include the standardized engineering drawings and details necessary to support implementation of iSWM, Complete Streets, or other LID design methods in Dallas. Engineers from the Public Works, Dallas Water Utilities, Sustainable Development and the Trinity Watershed Management departments have been working to update these details into an electronic format to allow easier incorporation into design and construction packages. Over 1,000 standard details have been developed to date, including 40 specifically related to sustainable design elements. Final review and implementation is anticipated in PY2, in order to support broader implementation of the iSWM and Complete Streets Initiatives.

- **EPA Green Infrastructure Technical Assistance Grant**: The City applied for an EPA Green Infrastructure Technical Assistance Grant to assist with consolidating and updating the various design manuals and

regulations, to better integrate green design practices, and to ultimately make "going green" easier in Dallas. In July, 2012, Dallas was selected as one of 16 communities across the United States to receive this grant. The scope involves technical review of most of the City's design guides and ordinances, with recommendations of ways to address potential barriers to implementing green infrastructure in Dallas. This review is ongoing by EPA's technical contractors, who will meet with appropriate City design staff in early PY2. The City intends to use this information to further refine the local provisions of the iSWM Manual, develop any necessary Code revisions and to consider other potential actions that would allow easier implementation of post-construction controls, and a more comprehensive planning and design process.

### *B (1) b - Implementation and Performance of Structural/Non-structural Controls*

Structural and non-structural controls associated with low-impact development are typically intended to provide both direct and indirect benefits to the water quality of the receiving water body. However, because many of these measures are relatively new, performance has not been fully assessed with respect to effectiveness in improving local water quality. The low impact development (LID) design elements and green infrastructure controls at City facilities will be tracked by type, and location. In addition, the number, location, size and land use types of new development and redevelopment projects using these measures will also be tracked. These data will be correlated with watershed monitoring data to allow evaluation of performance by control type, land use and location.

During the reporting period there were no new facilities completed with exterior LID features. These measures are still "voluntary". However, Table 1-B.1 provides the status of projects under development that will incorporate iSWM into the site design measures.

**Table 1-B.1 iSWM Project Status**

| Project | iSWM Elements | Project Status |
|---|---|---|
| Riverfront Boulevard – Urban Arterial Reconstruction | Bio-swale in center median | Under design; construction planned for PY2 |
| Elm Street Reconstruction | Bio-swale in center median, permeable pavers, tree-planter boxes | Under design; construction planned for PY2 |
| Polk Wisdom Public Library – New Construction | Permeable pavers, rain garden, onsite storage | Under design; construction planned for PY2 |
| Fire Station No. 37 Replacement (New Construction) | Permeable pavers, rain garden, onsite storage, Tree- planter boxes | Under design; construction planned for PY2 |
| Perot Museum of Nature and Science (Private) | Green roof, bio-swale, onsite pond, and roof-top cistern system | Under Construction, completion scheduled for December 2012 |

These projects are anticipated to be completed during PY2, with the iSWM-related design commencing on several new projects.

### *B (1) c - Dallas City Code Review and Updates*

During the reporting period, the City reviewed existing City Codes relative to State and Federal regulatory changes, and implemented several updates. It is anticipated that several additional updates will be initiated /implemented

in PY2 to assist with implementing a comprehensive planning and design process relative to improving water quality.

- **Development Code Update:** The City enacted a Green Building Code in 2008 that requires buildings over 50,000 square feet to be sustainably designed to be LEED™ certifiable. During the reporting period, the City adopted ordinance (Ord. # 28813) amending the requirements of Phase 2 of the green building program. This amendment requires that "all proposed project lots must be designed so that at least 70 percent of the built environment, not including any area under the roof, is permeable or designed to capture water runoff for infiltration onsite." This is generally consistent with the current iSWM methodology.
- **Stormwater Code Update:** During the reporting period the City amended the stormwater drainage system ordinance (Ord. # 28461) to be consistent with the current TPDES construction General Permit, and Multi-Sector Permit; defining terms, updating prohibitions, and aligning requirements with state and federal regulations. These revisions also added requirements for secondary containment, concrete batch plants, construction site spill prevention and industrial facility best management practices to prevent discharges.

### B (2) Evaluation of Flood Control Projects

The City evaluates short term and long term impacts to the receiving waters for all flood control projects, including assessment of erosion potential, and integrated pollution prevention measures. Major capital improvement projects with water quality assessment during this reporting period included the engineering design and construction for the Ricketts Branch channel improvement project, Ledbetter Dike improvement project, new Delta/Pavaho gate structure, and constructed wetlands design projects for the Zoo, the Pavaho Sump and the Trinity River Corridor Project.

- **Ricketts Branch Channel Improvements:** The Ricketts Branch channel improvement project is a flood control project that was initiated in 2009. The engineering design was completed in December 2011 with construction starting in June 2012. The project is anticipated to be completed in February, 2013 during PY2. This project involves widening and deepening the channel to alleviate flooding conditions within a residential area. Erosion control and appropriate bank stabilization measures will be installed at various locations as needed. The erosion control and bank stabilization measures included in this project, are anticipated to provide water quality improvements by reducing suspended sediment.
- **Ledbetter Dike improvements**: The Ledbetter Dike improvements are another flood control project that was initiated during 2009, with the engineering design completed in December 2011 and the construction commencing in August 2012. With anticipated completion in May 2013, the Ledbetter Dike Improvement project involves a new concrete intake structure to allow better control of water flowing through the adjacent drainage channel, and less sediment entrainment from turbulent entrance conditions.
- **Pavaho Pump Station and Gate Structure**: The new Pavaho pump station entails a 378,000 GPM stormwater pump station that has been designed to rapidly convey floodwater from the adjacent West Dallas neighborhood through the levees and into the Trinity River. The pump station and sump includes a new electronically controlled Delta/Pavaho gate structure that will restrict water flowing through the concrete drainage channel between the Delta pump station and the Pavaho pump station. Currently, the water flow exceeds the pumping capacity of the Pavaho Station. Both projects will assist with better flood protection and improve water quality by capturing suspended sediments and floatable materials prior to discharge into the Trinity River.

- **Pavaho Stormwater Wetland Supplemental Environmental Project:** During the reporting period, design continued on the Pavaho West Sump, a 9.7 acre constructed wetlands pre-treatment cell, that is intermittently pumped through the West Levee to the Trinity River by the Pavaho pump station. This cell is one of the four wetland cells included in the 70-acre Pavaho Wetlands Supplemental Environmental Project. This constructed wetland cell will provide pre-treatment of stormwater drainage from three storm sewer outfalls that discharges through the Pavaho pump station into the Trinity River. The wetland area is expected to enhance the water quality of the stormwater entering the Pavaho sump by providing a biological filter for pollutants. This pre-treatment area is being designed so that stormwater will flow through shallow vegetation where naturally occurring physical, biological and chemical processes should reduce contaminants such as nutrients and metals from the stormwater. Construction is anticipated to commence during PY2.

- **Zoo Wetlands Supplemental Environmental Project:** During the reporting period, design continued on the Zoo Constructed Wetlands, an approximate 2-acre constructed wetlands post-treatment polishing wetlands that is designed to address runoff from the Dallas City Zoo. A preliminary package has been submitted to the TCEQ for a TPDES discharge permit from this wetlands into Cedar Creek. A portion of the runoff from the zoo will pass through a small packaged biological treatment process prior to passing through the wetlands. This polishing wetlands is designed so that stormwater passes through shallow vegetation with naturally occurring physical, biological and chemical processes to reduce contaminants, and improve water quality. Construction is anticipated to commence during PY2.

- **Trinity River Corridor Wetlands Projects:** Wetlands construction for the Trinity River Corridor Project is underway in part of the Dallas Floodway Extension Project located near downtown Dallas. These wetlands are planned primarily as measures to improve floodwater conveyance and provide ecosystem restoration. However, another important benefit these wetland cells provide is water quality enhancement through polishing the effluent from the wetlands water supply. The Trinity River Corridor project includes two wetlands efforts – locally known as the Upper Chain of Wetlands and the Lower Chain of Wetlands. When completed, the nine wetland cells will comprise an approximate 200-acre side-channel wetlands complex, extending from Cedar Creek, about four miles south to Loop 12.

    - Lower Chain of Wetlands**:** The US Army Corps of Engineers (Corps) completed construction of the five (5) wetland cells in the Lower Chain of Wetlands in 2008 providing a combined wetlands area of about 137 acres. During the reporting period, an additional 800 wetland plantings were added, while 2,800 native prairieland plantings were planted in the approximate 50 acre area surrounding these wetland cells. Figures 1-3 and 1-4 on the following page illustrate current wetlands conditions.

    - Upper Chain of Wetlands**:** Three new wetland cells located along the Trinity River between Interstate 45 and Cedar Creek were under design from 2008 through September 2012. The City plans to award an initial soil excavation project to prepare the area for full implementation of the wetland project by the Corps during PY2 and 3. These cells comprise the Upper Chain of Wetlands and would add another 63 acres of total wetland area along the Trinity River. Wetlands construction is expected to begin by late 2014.

Figure 1-3 Lower Chain of Wetlands: Wetland Cell G; Aerial view north

Figure 1-4, Lower Chain of Wetlands: Wetland Cell F, Isometric view east

| Table B-1<br>Summary of Performance: MCM 2 - Post-Construction Stormwater Control Measures | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **B (1)** ***Implement Comprehensive Master Planning Process for New and Redevelopment Projects*** | | | |
| ***B (1) a - Implement iSWM into Local Design Practices*** | | | |
| 3) Participate in City and regional implementation of integrated Stormwater Management (iSWM) master planning process for new and redevelopment projects. | Number, size, type and location of projects implemented using iSWM within City limits | Permit Year (PY) 1 - PY 5 | Four projects in planning and design; construction estimated to be complete in PY2; one under construction with completion in PY2 |
| 4) Expand existing City iSWM program to apply to sites greater than one acre in size | Number, size, type and location of projects implemented using iSWM within City limits | Permit Year 2 | Measure is in process |
| ***B (1) b -Implementation and Performance of Structural /Non-structural Controls*** | | | |
| Promote the use of Low Impact Development (LID) and green infrastructure controls including, but not limited to:<br>i) Green Roofs<br>j) Rain harvesting systems<br>k) Retention Ponds<br>l) Riparian buffer systems<br>m) Permeable pavement<br>n) Bio-swales<br>o) Constructed wetlands<br>p) Other | Number, type(s) and locations of LID features implemented at City facilities | Permit Year 2 - PY 5 | **0** there were no facilities completed with exterior LID features during the reporting period |
| | Number, size, type(s), land use and locations of new and redevelopment projects over 1 acre | PY2 – PY5 | NA |
| | Correlate water quality data with and data concerning types and locations of post construction controls in order to assess effectiveness of LID/Green Infrastructure | PY4 – PY5 | NA |

| Table B-1 (Continued)<br>Summary of Performance: MCM 2 - Post-Construction Stormwater Control Measures | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| ***B (1) Implement Comprehensive Master Planning Process for New and Redevelopment Projects (Continued)*** | | | |
| ***B (1) c - Dallas City Code Review and Update*** | | | |
| 2) Identify changes made to Dallas City Code with regard to federal, state, and local environmental regulations and design practices. | Number and types of updates made to Dallas City Code | Permit Years (PY) 1, 3 and 5 | **2** code updates (1 Development code and 1 Stormwater) |
| ***B (2) Evaluation of Flood Control Projects*** | | | |
| 2) Evaluate City capital improvement projects for flood control on a case-by-case basis to assess feasibility of incorporating stormwater controls to address water quality | # of Flood control/drainage project designs evaluated | PY1 - PY5 | 7 projects in planning |
| | # of Flood control/drainage construction projects with water quality measures initiated | PY1 - PY5 | 2 projects initiated |
| | # of Flood control/ drainage construction projects with water quality measures completed | PY1 - PY5 | 1 project completed |
| | Types and locations of measures implemented | PY1 - PY5 | Erosion and velocity control measures; constructed wetlands |

# *MCM/ Element 3 – Illicit Discharge Detection & Elimination*

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### C. MCM 3: Illicit Discharge Detection and Elimination

The City implements a variety of efforts across most City departments to meet permit requirements to address illicit discharges: *"Illicit non-stormwater discharges to the MS4 shall be prohibited. For the purposes of this permit, the following discharges need not be addressed as illicit discharges by the permittee nor prohibited from entering the MS4: (1) Discharges regulated by a separate NPDES or TPDES permit; (2) Discharges for which an NPDES or TPDES permit application has been submitted; and (3) miscellaneous non-stormwater discharges, as described in the City's TPDES Permit, that are not prohibited by the permittee.* [Part III.B.2.c.ii-vii of TPDES Permit No. WQ0004396000]."

The City maintains a comprehensive illicit discharge detection and elimination (IDDE) program with activities to detect and eliminate illicit discharges to the storm sewer system, and to address sanitary sewer overflows, household hazardous waste collection, citizen response, yard waste and animal wastes, and illegal dumping. The City is also continuing efforts to maintain and regularly update an accurate MS4 map that includes all MS4 outfalls, and verifies system infrastructure. These activities, combined with ongoing monitoring (Element 8) provide for a proactive illicit discharge detection and elimination program.

- **Status of Implementing the SWMP**: All measures proposed in the SWMP for PY1 are fully implemented per the compliance schedule, and are functioning as intended to prevent the discharge of pollutants to the MS4 to the MEP. A description of the City's activities related to Illicit Discharges, Detection and Elimination, Overflow and Infiltration, HHW, Used Oil and Toxic Fluids MS4 Screening and MS4 Mapping follows. Table C-1 at the end of this section provides a summary of activities completed during the reporting period.
- **Proposed Changes to the SWMP for the next Reporting Year**: The City has reviewed the BMPs within this MCM for effectiveness, and is confident that they are working as intended to prevent pollutants from entering the MS4 to the MEP. However, the SWMP should be updated to include several new measures from the regional iPlan and iBRP that are scheduled to begin during PY2:
  - Report on Capacity Management Operations and Maintenance (CMOM) Program
  - Evaluate SSOs from lift stations
  - Relocate sanitary sewer out of waterways as practicable
  - Report on liquid waste hauler program
  - Evaluate potential Code revisions related to portable sanitary sewer unit location and service schedule
  - Identify areas served by on-site sanitary sewers and/or aerobic treatment units
  - Develop Supplemental Environmental Project Program
  - Assess City Parks for pet and wildlife use
  - Evaluate need to waterfowl management plan Development of Supplemental Environmental Project Program
- **Number and Nature of Enforcement Activities**: A summary of enforcement activities during this permit reporting period include:
  - **Illicit Discharges**: **101** NOVs, **6** citations and **1** outside complaint filed for illicit discharges; two chapter 54 letters transmitted by City Attorney's Office for illicit discharges; The City also revoked the Certificate of Occupancy from a chronic industrial violator.
  - **Illegal Dumping**: **818** citations; arrested **165** persons for illegal dumping.

### C (1) Illicit and Allowable Discharges

Illicit discharges, are formally defined as "*any discharge to a municipal separate storm sewer that is not composed entirely of stormwater*" with a few excepted discharges resulting from firefighting activities, certain water utility discharges, and discharges from TPDES/NPDES permitted sources (40 CFR 122.26(b)(2)). **Appendix A** provides a copy of Dallas City Code outlining prohibited and allowable discharges, and a list of TPDES/NPDES permitted discharges within the City's MS4 permit area.

### C (2) Discharge Detection and Elimination (IDDE)

The Illicit discharge detection and elimination (IDDE) process is used to locate and remove prohibited discharges from entering the storm drainage system. At this time, the City is fully compliant with the permit requirements concerning IDDE program implementation. The City's IDDE program uses a combination of dry weather outfall inspections, closed circuit televiewing (cctv), and storm drain system information from the asset inventory database to trace the origin of a suspected illicit discharge(s). Potential illicit discharges and disposal issues are investigated through a coordinated City-wide complaint response process.

#### C (2) a – Illicit Discharge Investigations

The City maintains a city-wide Customer Request Management System (CRMS) that provides internet and telephone (3-1-1) opportunities for citizen notification of illicit discharges or other stormwater-related concerns. The City's stormwater-related public education materials encourage the public to use the 3-1-1 system to report illicit discharges.

The City staff respond to citizen complaints and document responses using field reports that are logged back into the CRMS system, and also into the Stormwater Information Management (SWIMs) database. These databases allow assessment of the numbers and types of calls, and the locations of complaints. These data are then used to guide follow-on outreach, and training efforts. During reporting period, the City responded to **2,035** requests for service (or complaints) from citizens.

Table **1-C.1** provides a breakdown of the type and quantity of stormwater-related calls responded to by the City's Stormwater Management Section during the reporting period.

**Table 1-C.1 Stormwater-Related Customer Service Requests**

| Service Request Type | Total Count |
|---|---|
| Abandoned Substance | 75 |
| Illegal Dumping | 182 |
| Chemical Spill | 511 |
| Private Property Water Leak | 108 |
| Private Sewage Leak | 27 |
| Construction Site/ Erosion Control | 158 |
| Swimming Pool Discharge | 116 |
| Water Pollution – Creek Lake, River | 258 |
| Yard Waste | 11 |
| Storm Sewer Line Locates/Blocking Investigations (CCTV) | 589 |
| **TOTAL:** | **2,035** |

As shown, the most frequent service request is related to storm sewer facility inquiries, closely followed by chemical spills, and water pollution (creek, lake, river) and illegal dumping complaints. These CRMS requests

yielded an investigation of **825** illicit discharges, and resulted in the identification and elimination of **229** illicit discharges through investigations in response to these citizen concerns.

These investigations are being are now being tracked within the GIS database to allow trend analyses, and focused outreach efforts related to IDDE. Table **1-C.2**, on the following page, provides examples of the types of illicit discharges that were investigated in during the reporting period.

**Table 1-C.2 Examples of Illicit Discharge Detection and Elimination Activities**

| HUC-12 Watershed | Address | Date | Identified Discharge | Date IDDE Resolved |
|---|---|---|---|---|
| Bachman Branch-Elm Fork Trinity River | 4100 Dunnhaven Road | 9/25/2012 | Bulk ink discharge | 9/25/2012 |
| Headwaters White Rock Creek | 4240 S. Capistrano | 8/8/2012 | Hydraulic fluid spill | 8/9/2012 |
| City of Dallas-White Rock Creek | 7131 Shook Avenue | 4/23/2012 | Concrete slurry | 4/24/2012 |
| White Rock Creek – Trinity River | 811 Pemberton Hill | 5/2/2012 | Goat and chicken blood, hair, feathers and entrails | 5/3/2012 |
| White Rock Creek-White Rock Lake | 8080 N. Central Expy. | 10/28/2011 | Diesel fuel | 10/31/2011 |
| Headwaters Turtle Creek | 5710 Velasco Avenue | 4/25/2012 | Construction site sediment | 4/27/2012 |
| Turtle Creek – Trinity River | 2708 E. 11th | 12/10/2012 | Pig blood, hair, and entrails | 1/19/2012 |
| Upper Prairie Creek-Trinity River | 2807 Kingsford Avenue | 11/16/2011 | Yard waste | 11/21/2011 |
| Headwater Five Mile Creek | 4728 Clear Creek | 1/11/2012 | Transmission fluid | 1/13/2012 |
| Five Mile Creek-Trinity River | 6168 Bonnie View Road | 5/9/2012 | Private sewage leak | 5/10/2012 |

The illicit discharges are grouped by watershed in order to allow an assessment of any trends, or opportunities for focused Outreach and education. Table 1-C.3, on the following page, includes a summary of illicit discharge investigations by watershed.

As shown, the City has investigated illicit discharges in over half of the HUC-12 watersheds within the permit area. A majority of the investigations are located in the watersheds that comprise the older and more fully developed areas of Dallas in the White Rock Creek, Turtle Creek and Five Mile Creek watersheds.

| Table 1-C.3 Breakdown of Illicit Discharge Investigations by Watershed | |
|---|---|
| **HUC-12 Watershed** | **# Investigations Conducted** |
| **Elm Fork Trinity River (Texas Stream Segment 0822)** | |
| Bachman Branch-Elm Fork Trinity River | 18 |
| Indian Creek – Elm Fork Trinity River | 1 |
| **West Fork Trinity River (Texas Stream Segment 0841)** | |
| Cottonwood Creek-Mountain Creek Lake | 1 |
| Fish Creek-Mountain Creek Lake | 4 |
| **White Rock Creek (Texas Stream Segment 0827)** | |
| Headwaters White Rock Creek | 3 |
| Floyd Branch – White Rock Creek | 14 |
| White Rock Creek-White Rock Lake | 34 |
| City of Dallas-White Rock Creek | 28 |
| **Main Stem Trinity River (Texas Stream Segment 0805)** | |
| Headwaters Turtle Creek | 38 |
| Turtle Creek Trinity River | 36 |
| Headwater Five Mile Creek | 23 |
| Five Mile Creek-Trinity River | 20 |
| **Other Unclassified Stream Segments** | |
| Upper Prairie Creek-Trinity River | 7 |
| Hickory Creek – Parson's Slough | 1 |
| **East Fork Trinity River (Texas Stream Segment 0819)** | |
| Cottonwood Creek-East Fork Trinity River | 1 |
| TOTAL: | **229** |

**C (2) b - <u>Illegal Dumping and Improper Disposal</u>**

The City eliminates illicit discharges and improper disposal sources of non-stormwater materials into the MS4 by investigating complaints, issuing citations, and making arrests for illicit discharges and improper disposal.

The City Marshals' "Illegal Dump Team" patrols the City to address illegal dumping, and illicit discharges. This team maintains and coordinates the proper cleanup and discharge or removal of disposed materials within 30 days of discovery, or as expeditiously as reasonably possible. During, PY1, a special unit within this team has been formed to patrol the Dallas Floodway to prevent illegal dumping, damages to the levees and flood control system, and other related vandalism. The City responded to over **257** citizen service requests related to illegal dumping, and abandoned substances, as described in Table 1-C.1.

During the reporting period, the City's Illegal Dump Team monitored over **63** chronic sites, investigated **920** cases, issued over **818** citations, arrested **165** persons, and referred **224** locations for cleaning. This program has removed over **580** tons of improperly dumped waste, including **5,026** tires.

### C (2) c - Grass Clippings, Leaf Litter and Animal Waste Management

The City stormwater code prohibits the "*discharge and intentional disposal of grass clippings, leaf litter and animal wastes in the MS4*" [Part III.B.2.c.vii.B) of TPDES Permit No. WQ0004396000]. Grass clippings, leaf litter and animal wastes are addressed through several different initiatives to limit biological wastes and nutrients discharges into the MS4. Because of the TMDLs established to address bacteria within the permit area, these measures are important towards achieving the necessary reductions in bacteria loading within the Upper Trinity River system through Dallas.

Grass clippings and leaf litter are primarily addressed in the spring and fall through outreach and education as discussed in Element 7. Because improper yard waste disposal is typically performed quickly with leaf blowers, it can be challenging to enforce. Seasonal "blitzes" are implemented a couple of times each year during heavy periods of spring and fall landscape activities. Staff drive residential areas, and provide education and, as necessary, notices of violation (NOVs) to property owners and landscape contractors who are performing landscape maintenance during the blitz period. Code enforcement concerning proper yard waste management is provided year round.

The City also addresses animal wastes related to pets through outreach and education, and appropriate Code enforcement concerning leash and "pooper-scooper" laws.

Since the recent inception of these programs, in September, 2012, the City has responded to **11** yard waste complaints to provide informational door hanger or the violator was provided information about proper yard and pet waste management.

The City has formed a Feral Hog Abatement Task Force to address the growing challenge posed by feral hog populations within the Dallas Floodway. The Task Force is developing recommendations for managing these populations to address damage to the levees, channels and flood control structures from these animals, and limiting related waste discharges in/near the waterways. Additional stormwater controls to address feral hogs may be developed through the Task Force recommendations.

As shown by the landuse mapping in **Appendix B**, the majority of the City's permit area is developed into urban and ultra-urban landuse types with limited areas that retain agricultural operations. The City will review data from the local county tax appraisal districts to identify properties with agricultural tax exemptions; these areas may support potential livestock grazing or other landuses that may warrant consideration of additional stormwater controls to address animal waste. Any necessary controls that may be identified will be coordinated with the applicable local soil and water conservation district personnel. Available public records do not indicate any confined animal feeding operations (CAFOs) in the permit area; however, facilities with industrial permits that may generate animal wastes are addressed by the SCMs under Element 5.

### C (3) Sanitary Sewer Overflows and Infiltration

In many cities across the United States, combined sewer systems and sanitary sewer overflows form the primary source of bacterial pollution to surface water. The City of Dallas does not have a combined sewer system. However, like many U.S. cities, the City has aging sanitary sewer infrastructure, and the related challenges of addressing sanitary sewer overflows (SSOs) and infiltration.

The City has implemented "*controls where necessary and feasible to prevent dry weather and wet weather overflows from sanitary sewers in the MS4 and limits the infiltration of seepage from municipal sanitary sewers into the MS4*" [Part III.B.2.c.vii of TPDES Permit No. WQ0004396000]. To accomplish this, the City actively implements several SCMs for the municipal sanitary sewer system to limit the inadvertent release of sewage from this system into the MS4. The City participates in the EPA Sanitary Sewer Overflow (SSO) Initiative to reduce the number of SSOs by improving the wastewater system and reducing the amount of grease build up, inflow, and infiltration. The City reduces SSOs and infiltration by conducting the following activities:

- Providing proper grease disposal information and education at public outreach events to residential customers, industry, and trade organizations;
- Inspecting grease generating establishments;
- Performing sewer main cleaning, conducting cctv inspections of the wastewater system, inspecting manholes, and inspecting selected sewer basins and areas with exposed sewer mains due to creek/stream erosion;
- Completing system upgrades through sliplining and replacement;
- Inspecting and remotely monitoring collection system lift stations;
- Conducting smoke tests;
- Applying root control application; and
- Using GIS technology to identify areas that may require more frequent inspections and maintenance to proactively address issues before they become emergencies.
- Changing the City Ordinance to include specific schedules for pumping out grease traps located upon the premises of Food Service Establishments; and
- Completing the Comprehensive Wastewater Collection System Assessment (CWCSA) and Wastewater Master Plan.

During the reporting period, the City responded to and resolved **198** SSO discharges **(156** Wet Weather SSO discharges and **42** Dry Weather SSO discharges). Response activities varied depending upon the nature of the overflow, but are generally categorized as follows:

- Follow-up sewer system cleaning
- Follow-up sewer system television inspection
- Point repairs to the sewer system
- Pipe replacement
- Pipe rehabilitation
- Data analyses
- Barricades and location monitoring (wet weather overflows)
- Illicit discharges and improper disposal investigations (wet weather overflows).

The City's SSO response activities included cleaning **1,792** miles of sanitary sewer pipes, applying a root control application to **73** miles of pipe, and performing **3,003** sanitary sewer repairs to laterals and mains. As a preventative measure, the City televised over **235** miles of sanitary sewer to help assess sewer condition, and prioritize repairs.

### C (4) Household Hazardous Waste and Used Vehicle Motor Fluid Program

The City "*prohibits the discharge or disposal of used motor vehicle fluids and household hazardous wastes (HHW) to the MS4, and promotes programs to collect used motor fluids and HHW for recycling reuse, or proper disposal*" in accordance with the related permit requirements [Part III.B.2.c.ix of TPDES Permit No. WQ0004396000]. Most households routinely use small amounts of pesticides, herbicides, fertilizers, used oil and other automotive fluids, batteries, paints, paint remover and solvents in the day-to-day upkeep of their homes, apartments and condominiums. These materials may contain hazardous materials, and are classified as "household hazardous waste". Improper discharge of these materials through the City's trash collection, or storm drainage system, can pose a significant environmental impact.

The City provides funding to the Dallas County Home Chemical Collection Center (HC3) to support the Dallas County Household Hazardous Waste (HHW) Program, and promotes and assists collection events. The program focuses on decreasing improper disposal of household hazardous chemicals and used oil. Promoting this facility helps to educate residents on proper use, care and disposal of these materials.

During the reporting period, the Dallas County HC3 Program collected and properly disposed of approximately **3,211,573** pounds **(1,606** tons) of household hazardous waste, hazardous paint, and electronic waste; **7,450** gallons of used cooking oil; **26,444** gallons of used oil and antifreeze (automotive fluids); **3,147** auto batteries and **12,025** oil filters. Specific quantities of waste collected for the HC3 program included:

- **1,572,488** pounds (**786.2** tons) of hazardous waste
- **1,322,900** pounds (**661.5** tons) of hazardous paint
- **239,625** pounds (**119.8** tons/**47,925** gallons) of recycled paint
- **316,185** pounds (**158.1** tons) of electronics
- **7,450** gallons of used cooking oil
- **22,126** gallons of used oil
- **4,318** gallons of antifreeze
- **3,147** auto batteries
- **12,025** oil filters

A total of **32,648** households used the HC3 Program during the permit period. Dallas County estimates that **15,656** households, or approximately **48**% of the total participants were City of Dallas residents.

Dallas County operates the HC3 Program facility as a central waste collection center. In addition to hosting several one-day collection events, the HC3 center is open Tuesdays, Wednesdays, Thursdays and the 2$^{nd}$ and 4$^{th}$ Saturdays of each month year-around. Collection services are provided free-of-charge to residents of Dallas County HC3 participating cities.

The City hosted two **(2**) one-day HHW collection events at the Southwest Center Mall. Five hundred and twenty-two (**522**) households participated in these events; three hundred and ninety-six (**396**) of the participants resided within the City of Dallas. Dallas residents properly disposed of approximately **67,640** pounds **(33.8** tons) of household hazardous waste, hazardous paint, and electronic waste; **25** gallons of used cooking oil; **373** gallons of used oil and antifreeze (automotive fluids); **71** auto batteries and **400** oil filters during these two events. Specific quantities of waste collected during these events included:

- **29,640** pounds (**14.8** tons) of hazardous waste
- **38,000** pounds of hazardous paint
- **2,016** gallons of recycled paint
- **25** gallons of used cooking oil

- **277** gallons of used oil
- **96** gallons of antifreeze
- **71** auto batteries
- **400** oil filters

**C (5) MS4 Screening and Illicit Discharge Inspections**

The City's MS4 screening and illicit discharge inspection activities fulfill the permit requirement to "*implement a Dry Weather Screening Program described in Part III.B.11.a (Monitoring and Screening) of this permit, to locate portions of the MS4 with suspected illicit discharges and improper disposal. Follow-up activities to eliminate illicit discharges and disposals may be prioritized based on the magnitude and nature of the suspected discharge; sensitivity of the receiving water; or other relevant factors. The entire MS4, but not necessarily each individual outfall must be screened at least once every five years"* [Part III.B.2.c.x of TPDES Permit No. WQ0004396000]. Illicit discharge inspection activities are conducted in response to complaints, to address identified illicit discharges and/or improper disposal, or in response to information obtained through the dry weather screening program.

The City's dry weather screening program focuses on identifying and eliminating illicit connections and improper discharges to the MS4. Techniques used for detecting illicit discharges include, but are not limited to:

- **Dry Weather Outfall Inspections**: Dry weather inspections are integrated into the MS4 map documentation tasks, and all known outfalls are scheduled for inspection within this permit term. If new outfalls are identified as a part of the process, then the MS4 system maps are updated with these data. Watersheds are prioritized for dry-weather screening by age of the neighborhood, age and condition of the infrastructure, and areas with heavy industrial and commercial land uses. The outfalls are geo-located using a Global Positioning System (GPS) unit. Any observations of discharge from the outfall are noted and are sampled for field parameters (pH, temperature, total suspended solids, turbidity, ammonia, chlorine, conductivity copper, iron, detergents dissolved oxygen, and hardness) using a dry weather sample kit. If there is an unusual color, odor, or other field parameter(s) noted outside of the ambient water quality conditions, then a full sample is collected and transmitted to a NELAP-certified laboratory for selected analyses.

- **Illicit Discharge Investigations**: When there are detected illicit discharges, the flow is traced from the discharge location to the source. Field observations and cctv review are used with dye testing as necessary to determine the source location. The identified owner is then compelled to make the appropriate system improvements to reduce the impact to the MS4. As appropriate for the severity of the discharge, the owner may be provided with a Notice-of-Violation, outside complaint or citation for an illicit connection, or discharge to the MS4. The City reports reportable quantities of hazardous materials, as defined in 30 TAC 327, to the TCEQ.

- **Routine Industrial and Construction Compliance Inspections:** While most routine industrial and construction compliance inspections include a review of the Stormwater Pollution Prevention Plan (SWPPP); these inspections also include a facility outfall inspection. Any illicit discharges identified through these inspections are noted in the inspection report, and sampled as described under the above dry weather description.

- **Service Request Responses Concerning Unusual Water Conditions:** Staff may also encounter illicit discharges through responses to water quality service requests. When the request includes information concerning unusual water conditions, staff will contact the complainant to get more information on the discharge, including physical characteristics and when and where it was first noticed. Under this circumstance, the MS4 map is used with inlet and outfall inspections to trace the origin of the release. Cctv is also used as necessary to trace the source.

- **Emergency Response to Spills and Fish Kills:** Illicit discharges are sometimes identified as a part of the City's investigation into the cause(s) and sources of spills and fish kills. The protocols followed are similar to those identified for unusual water conditions, and dry weather investigations.
- **Aerial Photographic Screening:** The City has recently implemented regular review of aerial photography as another way of identifying potential illicit discharges that may not otherwise be apparent during a routine facility or dry weather outfall inspection. Recent aerial photos of the MS4 are screened by "light-duty" personnel for anomalies in discharge location, water color or geomorphology. Any areas with identified anomalies are investigated through routine dry weather sampling, industrial facility inspections (as appropriate) and standard department procedures for IDDE detection and elimination.

The exceptional drought experienced during the summer of 2012 provided a good opportunity to perform a significant number of dry weather screening investigations. During the reporting period, the City monitored **4,515** discharge locations in **22** watersheds. Through this screening program, **141** new outfalls were identified, and **317** outfalls with a discharge occurring during dry weather were observed. The Headwaters-Turtle Creek watershed only accounted for nine (**9**) percent of the total outfalls inspected but, contained nineteen (**19**) percent of the outfalls with a dry weather discharge.

With the exception of the identified illicit discharges, the observed flows were generally natural flows, i.e. groundwater infiltration or runoff. Table 1-C.4 summarizes the dry weather screening activity per watershed during the reporting period.

**Table 1-C.4 Dry Weather Screening Activities**

| 12 Digit HUC Watershed | Watershed | # of Outfalls Inspected | # of Outfalls with Drainage | #Illicit Discharges |
|---|---|---|---|---|
| **Lower West Fork Trinity River (Texas Stream Segment 0841)** | | | | |
| Low Branch Mountain Creek | LBMC | 2 | 0 | 0 |
| Fish Creek-Mountain Creek Lake | FCMCL | 54 | 3 | 0 |
| Cottonwood Creek-Mesquite Creek Lake | CCMCL | 22 | 0 | 0 |
| Delaware Creek-West Fork Trinity River | DCWF | 36 | 1 | 0 |
| **Elm Fork Trinity River (Texas Stream Segment 0822)** | | | | |
| Indian Creek-Elm Fork Trinity River | ICEF | 81 | 10 | 0 |
| Grapevine Creek-Elm Fork Trinity River | GCEF | 24 | 3 | 0 |
| Farmers Branch-Elm Fork Trinity River | FBEF | 17 | 1 | 0 |
| Bachman Branch-Elm Fork Trinity River | BBEF | 419 | 46 | 0 |
| **White Rock Creek System (Texas Stream Segment 0827)** | | | | |
| Headwaters-White Rock Creek | HWRC | 168 | 16 | 0 |
| Floyd Branch-White Rock Creek | FBWRC | 621 | 51 | 0 |
| White Rock Creek-White Rock Lake | WRCWRL | 363 | 14 | 0 |
| **Main Stem Trinity River (Texas Stream Segment 0805)** | | | | |
| Headwaters-Turtle Creek | HTC | 406 | 61 | 0 |
| Turtle Creek-Trinity River | TC | 510 | 55 | 0 |

| Table 1-C.4 Dry Weather Screening Activities, (Continued) | | | | |
|---|---|---|---|---|
| **12 Digit HUC Watershed** | **Watershed** | **# of Outfalls Inspected** | **# of Outfalls with Drainage** | **#Illicit Discharges** |
| **Five Mile Creek System (Unclassified Water Body)** | | | | |
| Headwaters Five Mile Creek | HFC | 818 | 28 | 1 |
| Five Mile Creek-Trinity River | FMC | 370 | 18 | 0 |
| **Other Unclassified Creeks** | | | | |
| Hickory Creek - Parsons Slough | HCPS | 81 | 0 | 0 |
| Upper Prairie Creek - Trinity River | UPC | 344 | 3 | 0 |
| Headwaters Ten Mile Creek | HTM | 52 | 2 | 0 |
| **Lake Ray Hubbard (Texas Water Segment 0820)** | | | | |
| Duck Creek | DC | 38 | 2 | 1 |
| **East Fork Trinity River (Texas Stream Segment 0819)** | | | | |
| Mustang Creek - East Fork Trinity River | MCEF | 10 | 0 | 0 |
| South Mesquite Creek | SMC | 29 | 3 | 0 |
| | **TOTAL:** | **4,515** | **317** | **2** |

Additional information on the City's MS4 screening programs, documentation of illicit discharge inspections and a breakdown of identified sources is provided in Element 8 of this report.

### C (6) NPDES and TPDES Permittee List

The City maintains a list of discharges directly to the MS4 with NPDES or TPDES permit to fulfill the permit requirement to "*maintain an updated list of facilities that discharge directly to the MS4 that have been issued an NPDES or a TPDES permit. The list shall include the name, location and permit number of the discharger*" [Part III.B.2.c.xi of TPDES Permit No. WQ0004396000].

The City maintains a current list of sites including name, location, and permit number that require NPDES/TPDES permits. During the reporting period, a total of **3,370** sites were inspected: **355** large construction sites, **340** small construction sites and **2,675** industrial sites. The list is updated daily as new sites initiate construction, or industrial operations under the required NPDES/TPDES permits. A copy of the current list of NPDES and TPDES permittees is included in **Appendix A**.

### C (7) MS4 Map Verification and Update

Maintaining an updated, accurate map of the MS4 can be critical to providing timely emergency response for spills, and in detecting illicit discharges through the system. The City maintains a "*current, accurate MS4 map that includes the location of all MS4 outfalls; the names and locations of all waters of the United States, that receive discharges from the outfalls; and additional information needed by the permittee to implement the SWMP*" [Part III.B.2.c.xii of TPDES Permit No. WQ0004396000].

City presently operates a system with about 11,000 different storm sewer outfalls, 1,800 miles of storm sewer pipe, and over 67,000 inlets. The original MS4 system mapping was developed through scanned archive construction documents that were submitted to the Building Official for approval prior to construction. This system was field verified by survey crews working under a registered public land surveyor as a part of the original

system documentation conducted in the 1990s and early 2000s, and the maps were then digitized into the Stormwater Information Management System (SWIMs).

During the previous permit term, the City implemented a unified asset inventory system that assigned unique identifiers to the City's stormwater assets to allow efficient tracking of system conditions, inspections, and maintenance. The system is a GIS-based data management system that integrates system inventory data into the system map. Regular updates, corrections and additions to this data management system provide timely, accurate data needed to effectively manage the stormwater infrastructure system. At present, the field asset verification program involves several efforts:

- The 11,000 outfall locations are being verified as a part of the Dry Weather Inspection program. All outfall locations are verified using a survey grade GPS system, and these data are uploaded into the asset inventory system. Staff currently use a combination of system mapping and physically walking the channel banks to locate any outfalls that were previously not identified. In addition to verifying the location and performing dry weather discharge monitoring, the outfall condition is also noted, and any repair or replacement needs are forwarded to the appropriate department for action.
- Outfall locations on industrial facilities are verified as a part of the regular site compliance inspections, with staff physically locating and inspecting each sample outfall identified in the SWPPP. Outfalls that require repair or other improvements are noted in the facility inspection report. Significant variances between the SWPPP and observed field conditions will also be noted and may warrant an NOV.
- The 67,000 inlet locations are being verified by "light duty" staff on an established City-wide schedule that will allow verification of the entire system within the required four year period. These inspections include location verification using survey grade GPS, along with an assessment of inlet condition. Any needed cleaning or repairs are noted, and these data are electronically uploaded into the asset inventory.
- The inlet and outfall inspections are coordinated on a watershed-by-watershed basis in advance of the cctv television system inspections to more efficiently streamline the cctv operations with respect to unknown system conditions. The cctv crews teleview all of the primary storm sewers to verify location, size, pipe type, and condition. They also upload electronic data into the asset system, and provide recommendations for any necessary line cleaning or repair.
- There is one cctv team dedicated to new construction documentation. Upon receiving notification from the building inspection officials that construction is complete, the cctv crew field-verifies the locations, type and sizes of the inlets, manholes, storm sewers and outfalls associated with the new construction. All data is collected using a combination of field grade GPS equipment, and cctv, and is uploaded into the asset inventory.
- The asset inventory is also updated through GPS locations of surface features and cctv inspections that are conducted in response to customer requests for storm sewer system locations.
- The asset inventory may also be updated through contracted cctv and field verification of storm drainage facilities on a site-specific basis. Contracted asset map updates are required to be consistent with the City's Field Asset Verification protocols.

To date, the City is making good progress on the new requirement for map verification. Over **26,217** updates were made to the MS4 maps during this reporting period. These efforts included verifying **23,154** existing outfalls, inlets, and new storm sewer pipe sections. The map updates include the drainage system verification, condition assessment, and mapping work performed at the Love Field, and Executive Airports to support ongoing Drainage

Master Plans for these facilities. Additionally **24** new pipe systems, including **3,063** new assets were also added to the system maps. These map improvements are immediately uploaded to the maps each night so that the map is regularly updated with new information. A copy of the current MS4 map is included in **Appendix B**.

| Table C-1<br>Summary of Performance: MCM 3 - Illicit Discharge Detection and Elimination | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **C (1) Illicit Discharge Detection and Elimination** | | | |
| Work to correct the discharge, or remove the improperly disposed materials, within 30 days or as soon as reasonably possible. | #of illicit discharges and illegal disposal sources identified and the time to resolve | Permit Year 1 (PY1) - PY5 | 184 illicit discharge investigations; 2 illicit discharges, all resolved within 30 days. |
| **C (2) Detection and Elimination of Illicit Discharges** | | | |
| ***C (2) a – Illicit Discharge Investigations*** | | | |
| Facilitate public reporting and response to resident concerns regarding illegal dumping or improper discharge of non-stormwater materials. | Number and types of illicit discharge related calls received per watershed | PY1 - PY5 | **2,035** investigations conducted in response to public reporting; types of investigations summarized in Table 1-C.1 |
| ***C (2) b – Illegal Dumping and Improper Disposal Investigations*** | | | |
| Detect, Inspect and investigate illicit discharges and /or improper disposals | # and type of investigations conducted | PY1 - PY5 | **229** investigations conducted concerning illegal dumping; types of investigations summarized in Table 1-C.1 |
| ***C (2 ) c - Grass Clippings, Leaf Litter and Animal Waste Management*** | | | |
| Work to reduce improper disposal of grass clippings and leaf litter | # of Leaf Litter Blitzes provided | PY2 - PY5 | NA this period |
| | # of homes and businesses contacted through concerning yard waste | PY1 - PY5 | 34 |
| | # of pamphlets and NOVs provided | PY1 - PY5 | 254 |

| Table C-1<br>Summary of Performance: MCM 3 - Illicit Discharge Detection and Elimination | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| Work to reduce impacts from improper animal waste management by participating in local and regional Feral Hog initiatives | # of meetings attended by City personnel | PY1 - PY5 | City personnel participated in **13** regional and local meetings concerning Feral Hogs |
| | # of recommendations developed and implemented | PY1 - PY5 | Two (2) recommendations for surveying and trapping made and implemented |
| Review tax records, and other data sources to identify areas where additional controls may be required to prevent animal wastes from impacting the MS4 | # of tax records obtained | Permit Year 2 | NA this period |
| | # of properties identified | Permit Year 3 | NA this period |
| | # of properties reviewed for additional control requirements | Permit Year 4 | NA this period |
| **C (3) Limit Sanitary Sewer Overflows and Infiltration** | | | |
| 1. Minimize the number and effects of sanitary sewer releases to storm drains by:<br>a) Inspecting sanitary sewer pipes; | Miles of sanitary sewer inspected using CCTV | PY1 - PY5 | **373** miles of sanitary sewer inspected |
| b) Performing preventative maintenance of the sanitary sewer system; and | Miles of root control application completed to sanitary sewers | PY1 - PY5 | **143** miles of root control completed |
| c) Cleaning and repairing the sanitary sewer system. | Miles of sanitary sewer pipes cleaned | PY1 - PY5 | **2,872** miles of sanitary sewer cleaned |
| | Number and location of repairs completed per watershed | PY1 - PY5 | **5,328** sanitary sewer repairs completed |
| 2. Evaluate effectiveness of sanitary sewer overflow SCMs. | Identified wet weather and dry weather sanitary sewer discharges to the MS4 | PY1 - PY5 | **156** wet weather sanitary sewer overflows identified |

| Table C-1<br>Summary of Performance: MCM 3 - Illicit Discharge Detection and Elimination | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| | Locations of wet weather and dry weather sanitary sewer overflows per watershed | PY1 - PY5 | **72** dry weather sanitary sewer overflows identified |
| **C (4) Household Hazardous Waste and Used Motor Fluids Program** | | | |
| 1. Promote and participate in the Dallas County Home Chemical Collection Center (HC3). | Motor vehicle fluids and HHW collected from City of Dallas residents per Year | Permit Year (PY) 1 - PY5 | **26,444** gallons of used oil and antifreeze collected<br>**786.2** tons of HHW collected at the HC3 during the reporting period |
| 2. Assist Dallas County with one (1) off-site Household Hazardous Waste (HHW) collection event. | Motor vehicle fluids and HHW collected from City of Dallas residents collected through this off-site event | PY1 - PY5 | **373** gallons of used oil and antifreeze collected and **14.8** tons of HHW was collected from Dallas resident during the 2 City sponsored events |
| **C (5) MS4 Screening and Illicit Discharge Inspections** | | | |
| Detect, inspect, and investigate illicit discharges and/or improper disposals. | Illicit discharges or improper disposals | PY1 - PY5 | **229** investigations conducted; types of investigations summarized in Table 1-C.1 |
| Facilitate public reporting and response to resident concerns regarding illegal dumping or improper discharge of non-stormwater materials. | Number and types of illicit discharge related calls | PY1 - PY5 | **2,035** investigations conducted in response to public reporting; breakdown by type is included in Table 1-C.1 |
| **C (6) NPDES and TPDES Permittee List** | | | |
| Maintain a list of dischargers to the MS4 with TPDES/ NPDES stormwater permits associated with industry and construction activities. | Name, location, and TPDES/NPDES permit number for each permitted activity | PY1 - PY5 | **1,615** Industrial permits, **695** construction permits; see **Appendix A** |

| Table C-1<br>Summary of Performance: MCM 3 - Illicit Discharge Detection and Elimination | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **C (7) MS4 Map Verification and Update** | | | |
| 4. Verify existing drainage asset data (i.e., inlets, outfalls, pipes and other features) | Number and types of asset system updates through existing system verification | PY1 - PY5 | **23,154** updates; see current maps in **Appendix B** |
| 5. Compile new drainage asset data (i.e., inlets, outfalls, pipes and other features) to a unified asset inventory system and assign unique identifier. | Number and types of updates to asset mapping database that reflect new assets | Permit Year 1 - Permit Year 5 | **24** new storm sewer systems containing **3,063** new assets added |
| 6. Review data acquisition procedures, and revise as necessary. | Document review conducted and any recommended revisions to the SWMP | Permit Year 1 - Permit Year 5 | Data acquisition procedures have been reviewed, no updates deemed necessary at this time. |

# *MCM/ Element 4 – Pollution Prevention/ Good Housekeeping for Municipal Operations*

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## D. MCM 4 - Pollution Prevention/ Good Housekeeping for Municipal Operations

This section describes the measures that the City has implemented to address permit requirements for: *"(A) identification and implementation of good housekeeping and best management practices (BMPs) to reduce pollutant runoff from Municipal Operations such as street and highway maintenance, parks, municipal office buildings and water treatment plants; (B) reduction of discharge of pollutants to the MEP from road repair, equipment yards, and material storage facilities or maintenance facilities; and (C) training for all employees responsible for municipal operations which includes information on preventing and reducing storm water pollution from all municipal operations subject to this MCM."* [Part III.B.2.d.i of TPDES Permit No. WQ0004396000].

Promoting good internal pollution prevention and good housekeeping measures at city facilities ensures that cities "walk-the-talk" as far as preventing stormwater pollution from day-to-day city operations and maintenance activities. These actions are important with respect to maintaining integrity with the communities served, and ultimately in being able to effectively enforce environmental regulations within the permit area.

The City of Dallas has a robust existing pollution prevention and good housekeeping program that focuses on continuous improvement processes to reduce pollutant runoff from municipal operations. This program incorporates the City's Environmental Management System (EMS), and provides for appropriate management of the waste removed from the MS4, any pesticides, herbicides and fertilizer use, facility-specific Spill Prevention Control and Countermeasure (SPCC) Plans (when required), and emergency response requirements that are accounted for and executed on a city-wide basis. As described in Element 7, training to prevent and reduce stormwater pollution from municipal operations is provided through an ongoing "in-reach education program" promoted by environmental staff in several departments.

- **Status of Implementing the SWMP**: All measures proposed in the SWMP for PY1 are fully implemented per the compliance schedule and are functioning as intended to prevent the discharge of pollutants to the MS4 to the MEP. A description of Pollution Prevention/Good Housekeeping for Municipal Operations' activities follows. Table D-1 at the end of this section summarizes activities completed during the reporting period.
- **Proposed Changes to the SWMP for the next Reporting Year**: The City has reviewed the BMPs within this MCM for effectiveness; there are no changes to the SWMP proposed at this time.
- **Number and Nature of Enforcement Activities**: Not applicable.

### D(1) Establish Pollution Prevention/Good Housekeeping Program

The City established an effective pollution prevention/good housekeeping program by implementing an Environmental Management System (EMS) program in 2005. This program was certified under the International Standards Organization (ISO) 14001 protocols for EMS in June 3, 2008, and was re-certified in June, 2011 after a comprehensive external audit by Bureau Veritas.

To support implementation of the EMS, the City also developed several Administrative Directives (ADs) that outline City environmental policy and set forth specific requirements for all operations to minimize the City's impact on the environment. The EMS and related environmental ADs require identification and implementation of good housekeeping and BMPs, development of Standard Operating Guidance (SOGs) to promote reduction of discharge of pollutants to the MEP from road repair, equipment yards, and material storage facilities, water plants, and maintenance facilities, and regular environmental training for all employees. During the reporting period, **189** internal EMS audits were conducted to review the environmental aspects and impacts of City operations. Within the 13 participating departments, there were **356** facility inspections and **3** external audits.

### *D (2) Structural Control Maintenance*

The City's structural control maintenance program is described in detail under Section A, MCM 1: MS4 Maintenance.

### *D (3) Waste Handling*

Preventing environmental impacts through appropriate management of the waste materials removed from the MS4 is as important as removing the wastes from the MS4. The City has put measures in place to "*ensure the proper disposal of waste that is removed from the MS4 or from other municipal operations"* [Part III.B.2.d.ii of TPDES Permit No. WQ0004396000]. Appropriate municipal waste management is one facet of the City's EMS program, and waste manifests are reviewed for completeness and accuracy. Wastes are reused and recycled wherever possible and appropriate. During the reporting period, an estimated **52,520 tons** of debris and floatables were removed from the City's MS4.

The volume of waste that is removed from the MS4 is monitored year-by-year to assess trends in floatables, and other pollutants, and to focus outreach and enforcement efforts. It is important to note however, that the storm drainage system is comprised of man-made features within a natural environment, and thus will be influenced by natural fluctuations such as climactic, biologic, and geomorphologic processes that may be largely outside of the City's control. Some variation should be expected in year-to-year waste volumes, particularly those related to the natural, organic wastes such as trees, and woody debris. Table 1-D.1 provides a summary of the wastes removed from the MS4 through the various measures implemented under the SWMP.

**Table 1-D.1 Waste Materials Removed from MS4**

| Activity Description | | Material Volume Removed | |
|---|---|---|---|
| | | Cubic Yards | Estimated Tons* |
| Storm system cleaning: inlets, storm sewers, pressure storm sewers and street pump stations | | 12,932 | 1,819 |
| Pump station trash rack cleaning | | 3,508 | 493 |
| Sump Maintenance | | 51,729 | 7,240 |
| Levee/ Floodway Maintenance | | 251, 847 | 35,416 |
| Retention/Detention Pond Maintenance | | 2,798 | 393 |
| Creek/Channel Maintenance | | 24,234 | 3,408 |
| Stormwater Interceptor Cleaning** | | 54,223 | 27 |
| Floatables | Litter Booms | 553 | 80 |
| | Special Events*** | - | 18 |
| | Litter Abatement*** | - | 790 |
| Street Sweeping | | 16,033 | 2,255 |
| Illegal Dumping Cleanups*** | | - | 580 |
| | | **TOTAL:** | **52,519** |

**Notes:**

* Estimated based upon observed 75/25 percent split between sediment/ woody debris and floatables; using standard waste unit weights from National Recycling Coalition Measurement Standards, (EPA, 2006)
Assumed unit rates: waste materials: 281.25 pounds/CY, and 2000 pounds/ton

** Gallons converted to CY based upon assumption of 25 percent solids by volume, and above conversion rate.

***Direct Tonnage provided by waste manifests

### *D (4) Pesticides, Herbicides and Fertilizer Application*

Pesticide, Herbicide, and Fertilizer (PHF) application program comprises the City's efforts that fulfill the permit requirement to: "*implement controls to reduce the discharge the pollutants related to the storage and application of pesticides, herbicides, and fertilizers, by the permittee's employees or contractors, to public right-of-ways, parks, or other municipal property"* [Part III.B.2.d.iii of TPDES Permit No. WQ0004396000]. This element reduces the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied by the City's employees or contractors to public rights-of-way, parks, or other municipal property.

Pesticides, herbicides and fertilizers (PHF) can have a negative impact to the environment when improperly used, including over-application, or applications made under conditions that can cause direct or indirect discharge into the MS4. In addition, the TCEQ recently implemented the related TPDES General Permit No. 870000, concerning the "Discharge of Biological Pesticides, and Chemical Pesticides that Leave a Residue in Water". This permit has tiered performance requirements based upon the area of contiguous waters treated and applies to entities that apply pesticides and herbicides to water bodies. The Permit requires an Integrated Pest Management Plan (IPM), tracking of applicator certifications, and documenting pesticide applications made each year.

The City maintains a program to reduce the discharge of pollutants related to the storage and application of pesticides, herbicides and fertilizers applied by City employees or contractors, to public rights-of-way, parks, and other City property. During the reporting period, the City developed draft standard operating guidance (SOG), a draft Integrated Pest Management Program (IPM), and related policy, in order to establish uniform standards and guidelines for using these substances at City facilities. Ongoing efforts include further implementation of these standards, periodic review and updates and related training.

In addition, the City submitted a Notice of Intent (NOI)/Self-Certification as a Compliance Action Level II Operator under TPDES Permit No. 870000. Compliance with this related General Permit requires documentation of the types, quantities and aerial extent of biological and chemical pesticides that the City and their contractors use each year. The City tracks certification of the City's pesticide applicators by maintaining a list of qualified personnel and reviewing personnel licenses, training and registration.

#### *D (4) a* - <u>City-wide Integrated Pest Management Plan (IPM)</u>

During the reporting period the City of Dallas contracted with Texas A&M University - Texas AgriLIFE Research and Extension Service to prepare an integrated pest management (IPM) plan for the City of Dallas and provide related training to city staff. Between May and August 2012 meetings were held with 10 departments involved in pest management and pest control. Most departments interviewed utilize third party applicators to control pests and apply pesticides.

The City-wide IPM is implemented as City policy through the development an Administrative Directive (AD) following standard city formatting, with associated IPM guidance document to serve as the department's point of reference for implementing the AD. The IPM guidance document defines uniform standards, and provides guidance for applying PHF on City-owned property by city staff or third party applicators. The AD defines IPM policy, purpose, scope and responsibilities for applying or managing the application of pesticides on City-owned property. Texas AgriLIFE Research and Extension Service has completed and submitted the draft of the IPM Administrative Directive and IPM Plan which is under Departmental review.

### *D (4) b* - TPDES Permit No. 870000 Activities

During the permit reporting period, The TCEQ implemented TPDES Permit No 870000, concerning the "Discharge of Biological Pesticides, and Chemical Pesticides that Leave a Residue in Water". City staff attended several meetings held by the TCEQ concerning requirements under TPDES Permit No. 870000 Pesticide General Permit. Several internal meetings were held with department staff from stakeholder departments that used pesticides, herbicides and fertilizers to convey the information received from the TCEQ, and to formulate a coordinated response to the permit when it was promulgated. Because the City typically treats more than one acre, but less than 5 acres of contiguous water bodies, the City submitted Notice of Intent to the TCEQ as a Level II Operator in January, 2012.

During the summer of 2012, there was a fairly critical outbreak of West Nile Virus that was attributed to *Culex* mosquitos. The majority of the treatment for mosquitos was regional aerial spraying that was provided by the various county health departments, rather than the local municipal governments. However, the Dallas Code Compliance, Park and Recreation, and Trinity Watershed Management departments also supported these regional efforts by treating local water bodies as necessary to reduce the potential for larval survival. Under this permit authority, a total of **2.37** acres of water were spot-treated by applying appropriate pesticides at **476** different locations. Appropriate follow-up to assess impacts to treated water bodies has been performed as required. No adverse impacts to waters treated by the City were identified.

### D (4) c - Licensed Pesticide Applicators and Training

A database is used to track City applicator license information, training certificates and the type of pesticide, herbicide and/or fertilizer used at each City facility. Information for the database is obtained by the completion of an inter-departmental questionnaire. Application licenses for City employees, as well as chemical application and storage locations, and an inventory of types of PHF in use, are currently being documented under the City's EMS.

### D (5) Maintain List of Municipal Facilities

The SWMP includes a list of all municipal operations that are "*subject to the municipal operations, maintenance, and training programs listed under this MCM and all municipally owned and operated industrial activities subject to TPDES or NPDES industrial stormwater regulations*." [Part III.B.2.d.iv of TPDES Permit No. WQ0004396000]. Developing a good inventory of municipal facilities with the potential to impact the environment is integral to the implementation of an EMS program, because it allows documentation of internal and external environmental compliance audits, and tracking of programmatic improvements.

As a part of the EMS implementation, the City developed a list of municipal facilities that are required to participate in the program. This information is maintained in a database that tracks EMS activities at each location. The list of municipal operations that are subject to the requirements of this element is included in **Appendix C**, along with a current list of TPDES Construction General Permitted projects, and a list of all municipally owned and operated industrial activities subject to the Multi-Sector General Permit (Industrial Permit).

### D (6) Spill Response Program

Spill Prevention and Response activities address the City's permit requirement to "*implement existing programs which prevent, contain, and respond to spills that may discharge into the MS4. The spill*

*response programs may include (A) a combination of spill response actions by permittee or another public or private entity, and (B) legal requirements for private entities within the jurisdiction of the permittee"* [Part III.B.2.d.v of TPDES Permit No. WQ0004396000].

Activities for Element 4 promote the effective development and implementation of City Codes and policies to limit stormwater pollutant spills. Administrative Directive 3-74 provides guidelines for employees for the prevention of and response to spills within the City of Dallas and at City facilities. The City reports the number of spill responses and maintains a spill prevention program that includes the proper handling, storage, and disposal of hazardous and non-hazardous materials. The City provides regular training activities on the spill prevention program and annually documents spill prevention training. The City uses additional BMPs to minimize entry of pollutants from City-owned vehicles into the MS4. Source controls and an established spill response program provide a systematic approach to minimize and prevent, where feasible, hazardous and non-hazardous substances from entering a water of the state.

The spill response program is supported through the activities of multiple City departments. This program incorporates the City's Environmental Management System (EMS), facility-specific Spill Prevention Control and Countermeasure (SPCC) Plans (when required) and emergency response requirements that are accounted for and executed on a city-wide basis. The City responds to spills, reports the number of spill responses, and maintains a spill prevention program that includes the proper handling, storage, and disposal of hazardous and non-hazardous materials. The City uses additional SCMs relative to preventative vehicle maintenance of City vehicles to minimize entry of pollutants from City-owned vehicles into the MS4.

The City uses the 311/911 system for receiving and dispatching notice of hazardous and non-hazardous spills. If a spill of this type enters the City's MS4 system, attempts are made to mitigate the effects to the MEP, to prevent the materials from reaching Waters of the United States. The City tracks all spills, including those with a discharge to the MS4, and those that are successfully mitigated so there are no MS4 impacts.

The City promotes effective development and implementation of City Code and policies that help limit stormwater pollutants, and maintains legal requirements for private entities within the jurisdiction of the permittee concerning spills and illicit discharges. Element 2 includes a regular review of these related City Codes to identify any needed updates to these Codes.

Table D-1 provides a list of the activities, measurable goals, or metrics to be tracked and the implementation schedule for the SCMs described in Element 4 – Pollution Prevention and Good Housekeeping Measures for Municipal Operations.

**D (6) a - <u>Spill Response Activities</u>**

During the reporting period, the City responded to a combined total of **3,277** hazardous spill response calls. The hazardous materials spill responses included: **679** fuel/hydrocarbons releases, **1,868** utility transformers/PCBs, **397** hazardous materials, and **333** HazMat Response Team Level 2 incidents. Of the **679** incidents involving hydrocarbons spilled, **12** entered the storm drain, and were remediated. A total

of **6,060** gallons were discharged to the MS4 through largely unavoidable spills and accidents, including a tanker car spill, and a rail car spill. These incidents were mitigated by contracted remediation companies to prevent these pollutants from adversely impacting the drainage system.

**D (6) b - <u>Spill Prevention Program</u>**

The spill prevention program is supported through the activities of multiple City departments. This program incorporates the City's Environmental Management System (EMS), facility-specific Spill Prevention Control and Countermeasure (SPCC) Plans (when required) and emergency response requirements that are accounted for and executed on a city-wide basis. "In-reach" education that is focused on spill prevention and response is provided internally to all City personnel.

A description of the City-wide program to provide appropriate environmental training including pollution prevention, and spill response is included in Element 7. This program includes, but is not limited to providing information on preventing and reducing storm water pollution from all municipal operations. City employees are trained on the proper procedures for reporting, containing spills and preventing pollutants from entering the storm drains.

Task-specific training is provided, as required, to personnel directly involved in the spill prevention and response programs. Training records for all personnel are maintained in departmental databases, and in the central Lawson database system. Over **138** different EMS, spill response, prevention, and cleaning classes were provided for City staff during the reporting period.

Specific spill prevention and response training includes:

- Stormwater Pollution Prevention Plans
- Spill Emergency Table Top Exercise
- Above Ground Storage Tanks & Used Oils
- Spill Response & Spill Prevention Control & Countermeasures
- Stormwater Management Spill Procedures
- H-1005 Chlorine Emergencies
- First Responder Hazardous Material Operations
- Flammable Liquids Firefighting Techniques
- H-201 Pipeline Emergency Operations
- EMS Awareness
- Right to Know
- G.E. Mobile Trace Field Detection – GE Security
- IAFC HazMat Fusion Center Reporting Data Input
- OSHA 1910.120 HAZWOPER Training
- OSHA 1910.120 HAZWOPER Refresher Training
- DOT Requirements for Hazardous Waste and Absorbent Materials
- Spill Response, Reporting and Cleaning

- Hazardous Waste Management
- Emergency Spill Response

**D (6) c - <u>Maintain City-Owned Vehicles</u>**

The City responds to all spills from City vehicles and verifies proper clean-up and disposal of the spilled material. City vehicles are equipped with spill kits, absorbent, and booms. Employees are trained on the proper procedures for reporting, containing spills and preventing pollutants from entering the storm drains. During the reporting period, there were **255** incidents involving City vehicles and hydrocarbon spills. A total of **1,585** gallons of hydrocarbons entered the storm drain; however, each spill was remediated.

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| Table D-1<br>Summary of Performance: MCM 4 - Pollution Prevention & Good Housekeeping for Municipal Operations | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **D (1) Establish Pollution Prevention Program** | | | |
| 1. Implement EMS program to promote continuous improvement with respect to pollution prevention and good housekeeping at municipal operations | # of internal environmental audits performed | Permit Year (PY) 1 - PY5 | **189** |
| | # of external environmental audits performed | PY1 - PY5 | **3** |
| | % of identified environmental issues addressed within 90 days. | PY1 - PY5 | **100%** interim/ **75%** 4th quarter |
| | # green procurement contracts utilized | PY1 - PY5 | One - EBS |
| | # of SOGs, BMPs, ADs and work instructions updated to reduce pollutant runoff from municipal operations | Permit Year 1, 3 and 5 | **2**, EBS & DFR |
| 2. Reduce potential for pollution by reducing the number and quantity of harmful chemicals used for municipal operations | # of non-toxic chemicals used | PY1 - PY5 | **1,696** |
| | Total # of chemicals used | PY1 - PY5 | **13,587** |
| | % of non-toxic chemicals used | PY1 - PY5 | **13**% |
| 3. Maintain list of municipal facilities included in EMS Program | # of City facilities audited | PY1 - PY5 | **356** |
| 4. Promote good housekeeping practices for City facilities and vehicles to minimize spills and pollutant discharge into the MS4. | # of oil/water separator cleanings | PY1 - PY5 | **15** |
| | # of City vehicles recieving preventative maintenance | PY1 - PY5 | **19,088** |
| | Total # of vehicular spills | PY1 - PY5 | **255** |

| Table D-1<br>Summary of Performance: MCM 4 - Pollution Prevention & Good Housekeeping for Municipal Operations (Continued) | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **D (2) Structural Control Maintenance** | | | |
| 2. Implement Structural Control Maintenance Program | Track types of structural control activities, and wastes removed | Permit Year (PY) 1 – PY 5 | Structural Control maintenance activities are summarized in detail in Table A-1 |
| **D (3) MS4 Waste Management** | | | |
| 2. Promote good housekeeping practices by tracking appropriate waste management by City facilities | # of City owned vehicular/equipment spills that enter the MS4 | | **8** |
| | # of City Departments that are small quantity conditionally exempt waste generators | PY1 - PY5 | **298** |
| | # of City Departments that are large quantity waste generators | PY1 - PY5 | **1** |
| 2. Promote good housekeeping practices by tracking appropriate waste management by City facilities | Volume of waste managed in support of Emergency response and spill remediation in tons | PY1 - PY5 | **8.53 tons** |
| | Volume of classified hazardous and universal waste managed by the City facilities in tons | PY1 - PY5 | **70 tons** |
| 3. Promote effective waste management for waste removed from the MS4 | Volume of wastes removed through MS4 maintenance activities in tons | PY1 - PY5 | **52,500 tons** |

| Table D-1<br>Summary of Performance: MCM 4 - Pollution Prevention & Good Housekeeping for Municipal Operations (Continued) | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **D (4) Pesticides, Herbicides and Fertilizer (PHF) Application** | | | |
| 1. As necessary, review and update the Integrated Pest Management (IPM) Plan to maintain uniform standards and guidelines for applying pesticides, herbicides, and fertilizers on City-owned property. | Number and types of changes to the IPM plan | Permit Years 1, 3 and 5 | **1** initial draft |
| | Document Plan review conducted | Permit Years 1, 3 and 5 | **1** |
| 2. Document City compliance with requirements of Pesticide General Permit No. 870000 | # of City facilities using PHF | Permit Year 1 – Permit Year 5 | **133** facilities |
| | # of application locations by, or contracted on behalf of City departments that are in/near water bodies | Permit Year 1 – Permit Year 5 | **476** areas spot- treated by Code Compliance/Trinity Watershed Management |
| | Total acreage in/near water bodies that are treated using pesticides and herbicides | Permit Year 1 – Permit Year 5 | **2.37** acres |
| 3. Maintain a list of employees who are licensed pesticide applicators, and review personnel licenses, training and registration | # of current licensed applicators | Permit Year 1 – Permit Year 5 | **4** with Code Compliance |
| | # of training hours accrued | Permit Year 1 – Permit Year 5 | **40** hours |

| Table D-1<br>Summary of Performance: MCM 4 - Pollution Prevention & Good Housekeeping for Municipal Operations (Continued) | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **D (5) List of Municipal Facilities** | | | |
| Provide current list of Municipal Facilities that participate in Pollution Prevention/Good Housekeeping Program | Updated list appended to Annual Report | Permit Year (PY) 1 – PY 5 | The City has **13** departments and **251** facilities that participate in the EMS; See **Appendix C** for complete listing of Municipal facilities. |
| **D (6) Spill Response Program** | | | |
| Respond to spills of hazardous and non-hazardous substances that enter the City's storm drainage system for which the City is notified by:<br>a) Mitigating the effects of the spill, and | # type and location of spill responses | Permit Year 1 – Permit Year 5 | **397** hazmat<br>**333** level 2 responses<br>**1,868** transformer/pcb<br>**679** fuels/hydrocarbon |
| b) Preventing the spilled substances, to the extent practicable, from entering a Water of the State. | # of successfully mitigated spills | Permit Year 1 – Permit Year 5 | **3,277** mitigated |
| | # of spills entering a Water of the State | Permit Year 1 – Permit Year 5 | **6,060** gallons entered but remediated |

# *MCM/ Element 5– Industrial and High Risk Runoff*

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## E. MCM 5 - Industrial and High Risk Runoff

This section describes activities undertaken by the City to "*continue to improve as necessary the existing programs to identify and control pollutants in stormwater discharges to the MS4 from municipal landfills; other treatment, storage, or disposal facilities for municipal waste (e.g. transfer stations, incinerators, etc.); hazardous waste treatment, storage, disposal and recovery facilities and facilities that are subject to Emergency Planning and Community Right-to-Know Act (EPCRA) Title III, Section 313; and any other industrial or commercial discharge the permittee determines are contributing a substantial pollutant loading to the MS4. The program includes priorities and procedures for inspections and for establishing and implementing control measures for such discharges; and an Industrial and High Risk Monitoring program as described in Part III, Section B.2.h.ii of the Permit*" [Part III.B.2.e.i-ii of TPDES Permit No. WQ0004396000].

The City's Industrial Inspection Program identifies and controls pollutants in stormwater discharges to the MS4, and includes priorities and procedures for inspections and for establishing and implementing control measures for such discharges, as required by the permit. The City conducts industrial and high risk runoff inspections at municipal landfills, and transfer, storage or disposal facilities (TSDs), industrial facilities permitted under Multi-Sector General Permit # TXR05000, and facilities that are subject to Title III, Section 313 of the Superfund Amendments and Reauthorization Act (SARA 313), that are required to submit annual Toxic Release Inventory (TRI) forms to the EPA. To augment the physical site inspections, the City also reviews water quality data collected as a part of the Dry Weather Screening Program, Wet Weather Screening Program, and Industrial and High Risk Runoff Monitoring Programs, as described under Element 8, to assess site compliance with the Permit requirements.

- **Status of Implementing the SWMP**: All measures proposed in the SWMP for PY1 are fully implemented per the compliance schedule and are functioning as intended to prevent the discharge of pollutants to the MS4 to the MEP. A description of Industrial Monitoring and High Risk Runoff Activities follows. Table E-1 at the end of this section summarizes activities completed during the reporting period.
- **Proposed Changes to the SWMP for the next Reporting Year**: The City has reviewed the BMPs within this MCM for effectiveness; there are no changes to the SWMP proposed at this time.
- **Number and Nature of Enforcement Activities**: **Forty-nine (49) NOVs** were issued to facilities for non-compliant issues identified during permit compliance inspections. The City Attorney's office also issued two Chapter 54 letters to industrial facilities with significant Code violations including illicit discharges.

### E (1) Priorities and Procedures for Inspections and Implementing Control Measures

The City addresses industrial facility stormwater discharges to the MS4 that may pose a threat to water quality through a comprehensive industrial program that includes regular screening, monitoring and inspections to establish priorities for implementing control measures. The industrial facilities are identified through a variety of methods and include facilities that are permitted under the TPDES Multi-Sector General Permit Number TXR 050000, facilities that are operating under a No Exposure Certification (NEC), and facilities that are identified through screening and that need to be permitted.

Regular inspections and control measures are generally effective in reducing the discharge of pollutants from industrial and high risk facilities to the MS4. City staff inspect industrial and high risk facilities operating with the potential to discharge pollutants to the MS4 including permitted industrial facilities known to the City, Superfund Amendment and Reauthorization Act (SARA) 313 facilities, permitted landfills, transfer stations and other Treatment, Storage and Disposal (TSD) facilities, and facilities that are

required to have an NOI that are subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) Title III, Section 313. Follow-up inspections are performed as required to enforce stormwater permit compliance.

Industrial and high risk facilities within the City limits with the potential to discharge pollutants to the MS4 are regularly inspected for adequate control measures to reduce the discharge of pollutants to the MS4. The inspection verifies that the structural and non-structural control measures as outlined in the Storm Water Pollution Prevention Plan (SWPPP) for the site are reflected on the site, and functioning as intended to prevent pollution from the site.

Sector U (Food and Kindred Products) facilities that have the potential to generate biological waste, including high Biochemical Oxygen Demand (BOD5), or bacteria in the site discharge will be inspected on a more frequent basis, with additional sampling requirements for these constituents as deemed necessary from a review of site monitoring data. Sites that have an NEC certification for no exposure of their operations to stormwater are also inspected to verify that site conditions warrant the no-exposure waiver. Table 1-E.1 outlines the priorities for inspection.

**Table 1-E.1**
**Priorities for Industrial Facility Inspection**

| Facility Risk Type | Minimum Inspection Frequency/Year |
|---|---|
| Superfund Amendment and Reauthorization Act (SARA) 313 facilities | All sites inspected annually with more frequent follow-up as needed |
| City permitted landfills, transfer stations and other Treatment, Storage and Disposal (TSD) facilities | All sites inspected annually with more frequent follow-up as needed |
| Other City facilities with TPDES MSGP permits | Annual with more frequent follow-up as needed |
| High Risk Facilities subject to the Emergency Planning and Community Right-to-Know Act (EPCRA) Title III, Section 313 | Annual with more frequent follow-up as needed |
| Sector U, or other facilities that pose a risk of biological/bacterial discharge | Annual with additional sampling and more frequent follow-up as required |
| Non-compliant sites, or sites with benchmark exceedences | Minimum quarterly with additional sampling and more frequent follow-up as required until site is in compliance. |
| Sites with No Exposure Certification (NEC) and all other MSGP permitted sites | Once per permit term, with follow-up as needed |

The City maintains legal authority to inspect industrial facilities, require site compliance, and provide tiered enforcement of non-compliance:

- Non-compliance (NC)
- Notice of violation (NOV)
- Three NOVs, or egregious offense warrants transfer to Enforcement Team
- Outside Complaints or Citations

Transfer to the Enforcement Team involves more frequent inspections, additional monitoring and submittal and implementation of a Compliance Action Plan by the facility operator. Operator training is provided as a part of the training activities outlined under Element 7, Public Education/ Outreach.

The City performed a total of **2,553** industrial facility inspections from February 22, 2011 to September 30, 2012. The City also conducted a site review and inspection of the eight (8) permitted City industrial facilities (1 landfill, 3 transfer stations, 1 salvage yard, 2 airport facilities and 1 Dallas Police Department facility).

The City inspected the all industrial sites classified as SARA 313 facilities once during the interim period (66 inspections), and again during the PY1 monitoring period (73 inspections). During the interim period, **81** facilities classified as high risk runoff discharge facilities were inspected. During the full PY1, a total of **195** high risk facilities were inspected. Of these sites, **70%** of the facilities inspected were found to be non-compliant and were required to update their Stormwater Pollution Prevention Plan, and make other onsite improvements to bring the site into compliance. During these inspections, **16** facilities were found to be no longer in operation at the facility location on record.

In addition, during the reporting period, the City added an annual inspection requirement for all Sector U facilities, related to food processing. While the facilities within this Sector have historically been classified as low-risk, through responding to illicit discharge investigations, the City encountered significant site discharge exceedances requiring enforcement action at one or more facilities classified within this Sector. During the development of the Regional iPlan for bacteria-related TMDLs and the local iBRP, provisions for more frequent inspections and additional sampling parameters beyond the current permit benchmark categories were recommended for this Sector. These measures were incorporated into the Final SWMP and the iBRP for the City. During PY1, the City conducted **30** facility inspections within Sector U facilities, and identified **22** Sector U facilities that were required to be permitted.

### E (2) Industrial Monitoring and Screening Program

The City uses Dunn & Bradstreet, the EPA Toxic Release Inventory, the TCEQ Central Registry, and other available information to screen industries by Standard Industrial Code (SIC) to identify potentially unpermitted facilities that may be required to permit. The City performs follow-up inspections at these facilities to assess whether a permit is required, and whether the site is generally compliant with the permit requirements. If the site is not compliant, then the normal tiered enforcement process applies. The screening process enforces Federal, State and City stormwater requirements while addressing discharges with the potential to impact water quality of the MS4 receiving water bodies. Through this process, **1,080** Non-TPDES facilities were identified that may require permitting under the Multi-Sector General Permit because of their SIC codes. As a result of the follow-on inspections of these facilities, **98** new TPDES-permitted industrial facilities were permitted during the reporting period.

Water quality screening is also performed by reviewing the site water quality monitoring data for permitted sites as submitted by the industrial facility operator. The City uses a proactive approach of soliciting the monitoring data from the sites that are required to do benchmark sampling. The data is entered into Environmental Data Management (EDMS) database, and compared to sector benchmark thresholds. Facilities that exceed the benchmark threshold values for one or more constituents are required to develop and implement a compliance action plan that includes additional BMPs, structural and non-structural controls as necessary to bring the site into compliance.

During the reporting period, the City received 435 “No Exposure” certificates, and monitoring data from **126** facilities. The majority of the reviewed data was compliant with permit requirements. An evaluation of the data from the facility, wet weather program, and dry weather program were used to determine the potential impact of an

industrial activity on water quality. Thirty (30) facilities that exceeded water quality parameters were directed to implement an action plan specifying immediate, intermediate, and long term practices aimed at reducing discharges that exceed water quality standards. Seventeen (17) facilities were required to provide more frequent monitoring and data submittals.

Table E-1 provides a list of the activities, measurable goals or metrics to be tracked, and the implementation schedule for the above SCMs for Element 5 – Industrial and High Risk Runoff. The Industrial water quality program is described further in Element 8, Monitoring, Evaluation and Reporting.

| Table E-1<br>Summary of Performance: MCM 5 - Industrial and High Risk Runoff | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012** |
| **E (1) Inspections and Control Measures** | | | |
| 1. Inspect 500 permitted industrial facilities known to the City. | # and type of inspections performed | Permit Year (PY)1 – PY5 | **1,126** inspections<br>(433 NOI, 693 NEC) |
| 2. Inspect all Superfund Amendment and Reauthorization Act (SARA) 313 facilities. | # and type of inspections performed | PY1 – PY5 | **139** inspections (all) |
| 3. Inspect permitted municipal landfills and Treatment, Storage and Disposal (TSD) facilities. | # and type of municipal landfills inspected | PY1 – PY5 | 2 landfill inspections |
| | # and type of TSDs | PY1 – PY5 | 4 Transfer Stations |
| 4. Inspect City facilities required to have a Notice of Intent (NOI) and that are subject to Emergency Planning and Community Right-to-Know Act (EPCRA) Title III, Section 313. | # and type of inspections performed | PY1 – PY5 | 8 |
| 5. Inspect Sector U, (Food Products and Kindred Products) and other similar facilities that have the potential to discharge biological constituents. | # and type of inspections performed | PY1 – PY5 | 30 facility inspections /4 enforcement inspections |

| Table E-1<br>Summary of Performance: MCM 5 - Summary of Industrial and High Risk Runoff (Continued) | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012** |
| **E (2) Industrial Monitoring and Screening Program** | | | |
| 1. Screen facilities with a Standard Industrial Classification (SIC) code that may require permitting under the Multi-Sector General Permit. | # of facilities identified through screening process that have SIC Codes that may require a MSGP Permit | Permit Year (PY)1 – PY5 | **1,080** non-permitted sites identified through screening<br>**98** New TPDES facilities permitted |
| 2. Evaluate the effectiveness of the screening program. | # of new permits received as a result of screening | PY1 – PY5 | **98** New permits; **285** permit renewals |
| 3. Use monitoring data review to enhance facility compliance | % of industrial facilities submitting required benchmark monitoring data | PY1 – PY5 | 65% |
| | % of submitted facility data sets that are compliant with benchmark parameters | PY1 – PY5 | 60% |
| | # of Corrective Action Plans required to achieve compliance | PY1 – PY5 | 30 Corrective Action Plans required |
| | % Action Plan Facilities brought into compliance | PY1 – PY5 | 65% |

# *MCM/ Element 6– Construction Site Stormwater Runoff*

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## F. MCM 6 - Construction Site Stormwater Runoff

The City has an ongoing Construction Site Runoff Program to implement measures to "*reduce the discharge of pollutants into the MS4 from construction sites".* This existing program "*addresses construction projects that are more than an acre in size, and that are part of a common plan of development*" [Part III.B.2.f.i of TPDES Permit No. WQ0004396000]. The City's existing construction program relies on five key SCMs to maintain compliance with the Permit requirements for construction Site stormwater runoff:

(A) "*Use and maintenance of appropriate structural and non-structural BMPs to reduce pollutants to the MS4*"; [Part III.B.2.f.i.A of TPDES Permit No. WQ0004396000];

(B) *"Requirements for construction site operators to address the control of site waste such as discarded building materials, concrete truck washout water, chemicals, litter, and sanitary waste"* [Part III.B.2.f.i.B of TPDES Permit No. WQ0004396000];

(C) *Education and training for Construction Site Operators* [Part IV.C.f.3 of TPDES Permit No. WQ0004396000];

(D) *"Inspection of construction sites and enforcement of control measure requirements"*, [Part III.B.2.f.i.C of TPDES Permit No. WQ0004396000];

(E) *Notification of applicants of responsibilities* [Part III.B.2.f.i.D of TPDES Permit No. WQ0004396000].

While the Permit requires initiation of all of these measures within one year of the Permit date, all of these measures are currently a part of the program, and so the City is continuing with existing program implementation.

- **Status of Implementing the SWMP**: All measures proposed in the SWMP for PY1 are fully implemented per the compliance schedule and are functioning as intended to prevent the discharge of pollutants to the MS4 to the MEP. A description of Construction Site Stormwater Runoff Activities follows. Table F-1 at the end of this section summarizes activities completed during the reporting period.
- **Proposed Changes to the SWMP for the next Reporting Year**: The City has reviewed the BMPs within this MCM for effectiveness; at this time, all BMPs are functioning as intended. However, an additional BMP will be added to require site plan reviews that incorporate considerations of water quality impacts, receipt and consideration of information submitted by the public and site inspection processes. The City's Planning and Zoning processes currently address these requirements, and the Annual Report reflects the efforts conducted to date. Thus, this is an administrative addition to the SWMP so that it parallels the Permit reporting requirements.
- **Number and Nature of Enforcement Activities**: The City issued **4,386 NOVs** during the compliance inspections of construction activities during the reporting period; **2,160** outside complaints were filed by the City Attorney's Office, and **one (1)** Citation was provided for significant construction site violations.

### F (1) Requirements for Structural and Non-structural BMPs

The City requires Stormwater Pollution Prevention Plans (SWPPPs) for all building and construction permit applications greater than one acre, that are located within the Escarpment or geologically similar area, or that are part of a common plan of development. The City's permitting process requires BMPs for erosion and sediment controls to protect water quality. During the reporting period, the City received **87** SWPPPs as part of the building permit application process.

The City's current planning and zoning process for all projects allows for "*site plan reviews that incorporate considerations of water quality impacts, receipt and consideration of information submitted by the public and site*

*inspection processes"*. [Part III.B.2.f.i.C of TPDES Permit No. WQ0004396000]. During the reporting period, a total of **373** sites went through the City's planning and zoning process.

A copy of the current Stormwater Drainage Code that specifically requires construction site operators to implement appropriate structural and non-structural controls, including measures to address the control of site waste such as discarded building materials, concrete truck washout water, chemicals, litter, and sanitary waste is included in **Appendix A**. This Code was updated in September 2011. Building and construction permit applications for less than one acre must comply with the erosion and sediment control BMP requirements of the City Administrative Procedures for Construction; Chapter 52, subchapter 6, section 607.

**F (2) Inspection of Construction Sites and Enforcement Requirements**

The City's construction site inspection program inspects construction sites for compliance with stormwater management requirements and practices. The types of inspected sites are as follows:

- Large Sites: Sites with ground disturbances over 5 acres in size, or that of any size, and located within a common plan of development, or in the escarpment or a geologically similar area. Inspections are scheduled every 2 weeks;
- Small Sites: Sites between 1 and 5 acres in size are inspected once within the first six weeks of notification of ground disturbance; and
- Sites with ground disturbances less than one acre in size are inspected in response to complaints.

During the reporting period, the City received **219** notices, letters, and/or building permits that were provided in accordance with the TPDES Permit No. TXR150000 General Permit for Construction Activities. The City conducted a total of **6,428** inspections at **355** large construction sites. The City conducted **2,668** inspections on **340** small construction sites between 1 and 5 acres. The City conducted **39** inspections of sites with ground disturbances of greater than one acre in size in response to complaints.

**F (3) Education and Training for Construction Site Operators**

The City has developed and presented training and educational programs for designers, engineers, construction site inspectors, and site operators on the appropriate use of BMPs at construction sites. During the reporting period, the City presented **8** construction workshops to the public to train designers and construction site managers on the TPDES General Construction Permit, stormwater pollution prevention planning practices and BMPs. A total of **244** people attended the construction workshops.

Two workshops were also presented to provide information on the requirements for the Clean Water Act Section 404 Permit, Federal Emergency Management Agency (FEMA) Floodplain Permit, and the TPDES Construction Permit, relative to construction in, or near waterways. Another **164** persons attended these presentations. The workshops were coordinated and presented by City staff and U.S. Army Corps of Engineers' personnel (Section 404 presentations. While open to the public, site owners and operators that have received one or more Notice(s) of Violation (NOV) during their construction inspections were targeted for attendance at these workshops, and received a special invitation to attend.

The City also conducted **114** onsite operator consultations or tail-gate presentations for **185** new operators. These onsite training sessions are initiated by City staff after receipt of a Notice of Intent or Construction Site Notice. The purpose of the consultation is to make sure the Operator understands the Permit requirements, answer any questions, and to provide information concerning SWPPP and applicable BMPs. The tail-gate presentation is designed for construction site personnel, focusing on the General Construction Permit guidelines, SWPPP updates, and the

proper installation and maintenance of BMPs. Both the consultations and tailgate presentations are provided free-of-charge, and are offered in English and Spanish.

**F (4) Notification of Requirements to Construction Site Operators**

The City monitors and revises the building permit procedures to maintain a process that notifies the contractors and construction building permit applicants of their responsibilities under the TPDES General Construction Permit. The City continuously evaluates the site planning checklist that requires the building permit applicants and contractors to provide a copy of the SWPPP for projects located on large sites. The City's Planning and Zoning processes currently addresses permit requirements to require site plan reviews that incorporate considerations of water quality impacts, receipt and consideration of information submitted by the public and site inspection processes. During the reporting period, **373** projects went through the Planning and Zoning Process that includes a thorough review of potential environmental impacts, adherence to City Codes and design standards, and includes a hearing to solicit public comments into the project(s). As a part of this process, the City informs the contractors and other building permit applicants of their responsibility to provide a copy of a Construction Site Notice (CSN) or Notice of Intent (NOI).

The City notifies all known permit applicants, owners and operators of the SWPPP requirements by providing an onsite consultation regarding permitting requirements and the implementation of the SWPPP. In addition, the City presents the Construction Inspection Workshops for designers, engineers, construction site inspectors, and site operators. While not required, this workshop is free of charge and attendance is highly encouraged.

**F (5) List of Construction Sites**

The City maintains a current list of all active small- and large construction- sites that are inspected as a part of permit compliance. The list is generated through the stormwater information management (SWIMs) database that is used to track permit data, inspections and compliance history. The list includes name, location and permit number of the discharges that have been authorized under an NPDES or TPDES permit. This list is updated through daily input of new permits NOIs and CSNs, Notices of Change (NOC) and Notices of Termination of Permit coverage.

The City inspected a total of **695** construction sites during the permit term: **355** large sites and **340** small sites. During the reporting period, there were **219** new sites added to the list, and **155** sites that terminated permit coverage, yielding a net gain of **64** sites. A copy of the list of construction sites that was active as of September 30, 2012 is included in **Appendix A**.

**F (6) Status of Complying with New Requirements**

All measures proposed in the SWMP for PY1 are fully implemented per the compliance schedule and are functioning as intended to prevent the discharge of pollutants to the MS4 to the MEP. Table F-1 at the end of this section summarizes activities completed during the reporting period.

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| Table F-1<br>Summary of Performance: MCM 6 - Construction Site Stormwater Runoff Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **F (1) Use and Requirements for Structural and Non-Structural BMPs** | | | |
| Require and inspect Stormwater Pollution Prevention Plans (SWPPPs) for specific building and construction permits in accordance with State regulations. | # of SWPPPs presented | Permit Year (PY) 1 - PY5 | **87** SWPPPs were presented to the City through the private development process |
| Require site plan reviews that incorporate considerations of water quality impacts, receipt and consideration of information submitted by the public and site inspection processes | # of projects that were evaluated through Planning and Zoning Process | PY1 – PY5 | **373** |
| **F (2) Inspection of Construction Sites and Enforcement of Control Measure Requirements** | | | |
| 1) Inspect construction sites for compliance with stormwater management practices. Conduct inspections as follows:<br>a) Five (5) acres and greater in size, in the escarpment or geologically similar area, or part of a common plan of development: every two (2) weeks; | Number, type and location of inspections | PY1 - PY5 | **355** construction sites five (5) acres or larger, sites part of a commom plan of development or within escarpment of geographically similar area (“large sites”)<br>**6,428** inspectionsof large construction sites |
| b) Sites greater than or equal to one (1) acre and less than five (5) acres in size on a monthly basis | Number, type and location of inspections | PY1 - PY5 | **340** construction sites with ground disturbances of one to five acres (“small sites”)<br>**2,668** inspections on small sites |
| 2. Conduct supplemental inspections of construction sites in response to complaints. | Number, type and location of inspections | PY1 - PY5 | **39** inspections on complaint responses of construction sites |

| Table F-1<br>Summary of Performance: MCM 6: Construction Site Stormwater Runoff Activities (Continued) | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **F (3) Education and Training for Construction Operators** | | | |
| 1. Present two (2) workshops to contractors, operators and construction site affiliated personnel on acceptable construction site SCMs, per year. | # of workshops provided and number of attendees | Permit Year (PY1) – PY5 | Presented **8** Construction Workshops to **244** contractors, operators, and construction site affiliated personnel.<br>Presented **2** Construction-Near-Water Permit Workshops to **164** contractors, operators, and construction site affiliated personnel. |
| 2. Present on-site consultations to operators and construction site personnel on site-specific construction site SCMs, per year. | # of consultations provided and number of attendees | PY1 - PY5 | Presented **114** on-site consultations to **185** operators and construction site personnel. |
| 3. Present on-site tail-gate training sessions to operators and construction site personnel on acceptable construction site SCMs, per year. | # of tailgate training sessions provided and number of attendees | PY1 - PY5 | Presented **9** on-site tail-gate training sessions to **71** operators and construction site personnel. |
| **F (4) Notification of Requirements to Site Operators** | | | |
| Review and revise the building permit procedures to ensure a process is in place that emphasizes notification of requirements under TPDES permit regulations, and incorporation of appropriate water quality measures and citizen involvement. | Revisions to process procedures | Permit Years 1, 3 and 5 | No changes during this time period. |

| Table F-1<br>Summary of Performance: MCM 6 - Construction Site Stormwater Runoff Activities (Continued) | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **F (5) List of Construction Sites** | | | |
| Maintain a list of active construction sites that are inspected for compliance | # of new sites added | PY1 - PY5 | **219** new construction sites were added during the reporting period. |
| | # of sites terminated | PY1 - PY5 | **155** construction sites were terminated during the reporting period. |
| **F (6) Status of Permit Compliance** | | | |
| Document status of implementing F (1) – (5) | See above metrics | PY1 - PY5 | All metrics compliant at this time |

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# *MCM/ Element 7– Public Education, Outreach, Involvement and Participation*

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## G. Public Education and Outreach/Public Involvement and Participation Program

The City implements a multi-faceted outreach and education program to fulfill the permit requirements to "*promote, publicize, and facilitate public education and outreach to residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel*." The program focuses on educational efforts in the following areas: *1) A program element to promote, publicize, and facilitate public reporting of illicit discharges or improper disposal of materials, including floatables, into the MS4; 2) A program element to promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes; 3) A program element to promote and publicize the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors; and 4) Appropriate education and training measures for construction site operators. [Part III.B.g of TPDES Permit No.WQ0004396000].*"

The City provide a focused and comprehensive public education, outreach, involvement and participation program to encourage stewardship of the City's surface water resources by raising awareness of the issues, providing information on BMPs that may be used to improve water quality, and providing opportunities for the public to provide meaningful input into the program.

The City's Public Education and Outreach Program includes an education and outreach campaign, volunteer activities, publications, City employee education ("Inreach"), coordinated Household Hazardous Chemical awareness, construction and industrial operator workshops. The program initiatives are coordinated with North Central Texas Council of Government (NCTCOG) Public Education Task Force, the iSWM Task Forces, the City-wide Environmental Outreach Team (EOT), and inter-departmental outreach representatives. In addition, volunteer opportunities are provided, as well as opportunities to provide input into the SWMP and other aspects of the SWMP through an interactive web presence. Samples of some of the materials used to implement this program are included in **Appendix D**. We are not aware of any group that is not addressed by the program.

- **Status of Implementing the SWMP**: All measures proposed in the SWMP for PY1 are fully implemented per the compliance schedule and are functioning as intended to prevent the discharge of pollutants to the MS4 to the MEP. A description of the Public Education, Outreach, Involvement and participation activities follows. Table F-1 at the end of this section summarizes activities completed during the reporting period.
- **Proposed Changes to the SWMP for the next Reporting Year**: The City has reviewed the BMPs within this MCM for effectiveness; at this time, all BMPs are functioning as intended.
- **Number and Nature of Enforcement Activities**: Not Applicable.

The City's outreach program promotes, publicizes and facilitates public reporting of spills, kills, illicit discharges and improper disposal of materials, and the management and disposal of used motor fluids and household hazardous wastes. The program also promotes and publicizes the proper use, application and disposal of pesticides, herbicides and fertilizers, pet waste management and yard waste management. The program is diverse, multi-faceted, multi-generational, and is targeted towards children, residents, non-governmental entities, visitors, staff, businesses, and operators of commercial and industrial facilities within the permit area.

The City's outreach program is implemented through efforts aligned in three primary focus areas:

- Public Education including technical training in direct support of the permit elements (Including inreach to City staff);

- Outreach;
- Public Involvement and participation to solicit input into the SWMP.

### G (1) a - Public Education

The focus of the City's education and outreach campaign is to improve stormwater quality by promoting greater awareness of issues related to stormwater management. This includes, but is not limited to topics related to: basic watershed concepts, illicit discharges and proper waste disposal, proper use and storage of herbicides, pesticides and fertilizers, proper yard waste and pet waste management, used oil and toxic materials, household hazardous waste (HHW), and general pollution prevention. Program effectiveness is measured by participation at outreach events, the number of visits to websites, general trends in the number of notice of violations (NOVs) at facility and site inspections and overall general public feedback on stormwater information dissemination.

#### G (1) a.1 - *Community Education*

The City provides public education and community outreach through presentations made across the city to community groups, including participation at public events. Topics include illicit discharges, improper disposal, pet waste, yard waste, pesticides, herbicides and fertilizers (PHF) and used oil and toxic materials (UOTM). Providing timely information on the proper use of these materials can help to prevent inadvertent illicit discharges to the MS4, and raise environmental awareness.

During this permit term, the Outreach team participated in **96** City-Wide, community, and business events and presentations that reached over **64,686** participants. These events are generally comprised of conventions, meetings, and other events where the Outreach team could set up a booth or table and demonstrate concepts using the Enviroscape watershed model, an interactive presentation that shows how pollution moves through a watershed.

Education and outreach are provided to a wide range of generational and cultural audiences including events conducted in English and Spanish. Table 1-G.1 provides a summary of education and outreach program events by topics that were completed in this permit term.

**Table 1-G.1 Education and Outreach Events by Topic**

| Topic | # of Events | | Attendance | |
|---|---|---|---|---|
| | Number | % of Total | Number | % of Total |
| Pesticides, Herbicides, and Fertilizers | 16 | 17% | 3935 | 6% |
| Used Oil and Toxic Materials | 7 | 7% | 892 | 1.4% |
| Pet Waste | 4 | 4% | 504 | .8% |
| Yard Waste | 3 | 3% | 98 | .15% |
| Little and Floatables | 1 | 1% | 298 | .46% |
| Illicit Discharges | 12 | 13% | 659 | 1.01% |
| General Pollution Prevention | 18 | 19% | 1571 | 2.42% |
| Environmental Stewardship | 35 | 36% | 57,029 | 87.76% |
| **TOTAL** | **96** | **100%** | **64,986** | **100%** |

### G (1) a.2 - ***School Education***

The City promotes a stormwater education campaign at area schools that focuses on watershed concepts and stormwater pollution prevention. The school programs run the gamet from providing story time and summer camp programs to younger students, to University-level classes and providing environmental science programs to "teach-the-teacher".

The City promoted a stormwater educational campaign at area schools. A total of **48** presentations were made to K-12 grade schools in Dallas Independent School District and Richardson Independent School District. These presentations introduced the basic watershed concepts and stormwater pollution prevention to **2,395** students in grade levels ranging from kindergarten to high school. In additional to grade school presentation, the City also conducted six (6) Used Oil and Toxic Materials presentations to **178** College Level Auto Tech students. There were also two (2) presentations made to **54** Dallas Independent School District teaching staff made as part of the "teach the Teacher program.

### G (1) a.3 - ***Business Education***

Illicit discharges, pesticides, herbicides and fertilizers (PHF) and used oil and toxic materials (UOTM) have the potential to degrade water quality in the MS4. The City provides focused training targeting businesses and trade organizations associated with these activities to disseminate information on current requirements, pollution prevention, and acceptable SCMs for protecting water quality, in order to "*continue to implement a public education and outreach program component to promote, publicize, and facilitate: 1) public reporting of illicit discharges or improper disposal of materials, including floatables, into the MS4;2) the proper management and disposal of used oil and household hazardous wastes; 3) the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors;* [Part III.B.2.g.i.B.1) 2), 3) of Permit No. WQ0004396000].

During the reporting period, the Outreach program provided 7 presentations and events to 1,597 business/trade organizations participants. The team provided four (4) presentations on IDDE, 1 on used oils and toxic materials and three (3) general stormwater management presentations.

### G (1) b - Technical Training

The City provides focused topic-specific technical training for identified sectors with a high potential to affect stormwater quality. This training is implemented to promote SCMs and stormwater management awareness. The technical training target audiences include city employees, operators of construction sites and industrial facilities, community members and specialized stakeholders such as contractors, technical consultants and business owners.

### G (1) b.1 - ***Construction Site Operator Training***

The City's construction site operators program affects site compliance by providing several opportunities to educate site operators and other affiliated personnel concerning appropriate ways of reducing stormwater pollution from their site. *The permittee shall continue to implement a public education and outreach program component to promote, publicize, and facilitate: 4) Appropriate education and training measures for construction site operators*. [Part III.B.2.g.i.B.4) of Permit No. WQ0004396000].

The City provides three types of construction training focused on promoting acceptable construction site SCMs to address effective site water management, erosion control, and sediment management:

- **Construction site operator workshops for owners, operators, contractors and their consultants**: Workshops providing stormwater related educational material are offered to construction site owners and operators. The workshops provide information on applicable state and local regulations, BMPs, inspection protocols, as well as the requirements of the TPDES Construction General Permit. Construction site owners and operators who have received NOVs are targeted for attendance and receive a special invitation to the Construction workshops. In this permit term, **244** attendees participated in the **8** construction workshops hosted by the City of Dallas Stormwater Management.

- **On-site consultation with the Operator following receipt of the NOI**: The City offers on-site construction consultations to site owners and operators as they begin new construction projects in the City of Dallas. The consultations include Stormwater Pollution Prevention Plan (SWP3) review, site inspections, and answers to questions from the site owner/operator. The consultations are designed to help keep the construction site in compliance with local and state regulations as well as permit requirements. Outreach team conducted **114** consultations to **185** site owners and operators during the reporting period.

- **On-site tailgate-type training sessions in English and Spanish that are targeted to on-site construction staff:** For sites that need additional information, the City also offers on-site construction tailgates upon request from site owners/operators. The tailgate is a customized training session tailored to the needs of the site, and the Operator. This permit term, the Outreach team conducted **9** on-site tailgates to **71** construction site workers.

### G (1) b.2 - ***Industrial Site Operator Training***

The City provides training to industrial facility owners, operators, and their consultants to disseminate information on current TPDES Multi-Sector General Permit requirements and to provide information on available resources to protect water quality in the MS4. Similar to the construction workshops, industrial site owners and operators who have received NOVs are targeted for attendance and receive a special invitation to the Industrial workshops. In this permit term, **195** attendees participated in the five (5) industrial workshops hosted by the City of Dallas Stormwater Management.

### G (1) b.3 – ***School Facility Operator Training***

In response to an illicit discharge associated with school facility maintenance personnel, the City also developed new training aimed at facility operators, that is focussed on illicit discharges, and appropriate disposal methods. This training was provided as three (3) Illicit Discharge workshops to **117** school district facility maintenance staff. The focus was to prevent inadvertent discharges into the storm drain system during normal end-of-year cleaning and facility maintenance operations.

### G (1) b.4 - ***City Staff Education (Inreach)***

The City conducts an "Inreach" initiative to raise City employees' awareness and promote pollution prevention practices to reduce discharge of pollutants into stormwater. Educational information is disseminated to City employees through electronic announcements, internet websites, new employee orientation presentations, and stormwater education modules. Topics include illicit discharges, floatables and litter, proper management and disposal of used oil and household hazardous wastes, and proper use, application, and disposal of pesticides, herbicides, and fertilizers by city staff or contracted vendors.

Project Managers are also invited to special workshops concerning appropriate construction site management SCMs, the TPDES General Construction Permit, Spill Response and other related issues

Spill prevention and training is provided on a three tiered system, depending on job duties. Training ranges from basic pollution prevention training, to spill prevention, to emergency response and incident command system training. Task-specific training is provided, as required, to personnel directly involved in the spill prevention and response programs.

- **Electronic Announcements:** Twelve (12) electronic announcements were sent to accounts in the City email system through the City's "E-nnouncement" program. These announcements promoted the stormwater pollution prevention and the internal online training modules (Stormwater 101, 201, and 301.
- **New Employee Orientation:** The Stormwater Awareness training module is presented to new employees during the new employee orientation. During this permit term, a total of **1,252** new City employees received Stormwater Awareness training.
- **Online Modules:** Stormwater Management has three online training modules, Stormwater 101, Stormwater 201, and Stormwater 301 for current City employees. The training modules were offered both online and as part of live presentations. During this permit term, **89** City employees completed the online modules; **20** employees completed Stormwater 101, 21 employees completed Stormwater 201, and **49** employees completed Stormwater 301.
- **Pollution Response Education:** Pollution response employee education includes Spill Response and Fish Kill Response. The targeted audience for these workshops is environmental specialists and other technical staff who will have spill response or fish kill response duties. These workshops provide hands-on training in how to prevent spills from entering the storm drain, how to remediate spills, and how to quantify the impacts of a discharge that result in water quality that directly or indirectly results in fish mortality. During this permit term, **9** Spill Prevention classes and **1** Fish Kill class was conducted; 206 employees attended these classes.

### G (1) c - Outreach

#### G (1) c.1 - *Community Outreach*

The City provides community outreach through neighborhood-based events and presentations and larger regional events downtown. Topics can include but are not limited to illicit discharges, general pollution prevention, and watershed science, floatables and litter, pet waste and yard waste management, used vehicular fluids and household hazardous wastes, and pesticides, herbicides, and fertilizers.

Neighborhood-based outreach is provided to Homeowners Associations, parent-teachers associations, church and school organizations, and non-governmental organizations to disseminate stormwater pollution prevention messages aimed at a wide range of topics depending upon the age group, demographics, and community interest.

The City also sponsors 3 or 4 larger regional events each year, such as the Margaret Hunt Hill Bridge opening, the Levee Run, the Trinity River Photo Contest, the Wind Festival, and EarthFest that are more generally focused on promoting stewardship of the Trinity River and the environment. During the reporting period, the historic Margaret Hunt Hill Bridge Opening brought together over **25,000** residents and the annual Trinity River Wind Festival had an attendance of over **2,000** residents.

### G (1) c.2 - *Visitor and Tourist Outreach*

The City provides outreach to visitors and tourists through a traveling exhibit that is displayed at various public locations such as Love Field, the Executive Airport, local museums and community centers and the public libraries. The Outreach team also utilized two traveling exhibitions to educate people who live and work in Dallas on stormwater issues. The exhibitions feature works of art designed to impart an important environmental message: every person in Dallas has the power to impact the local environment both positively and negatively.

The City also maintains 7 kiosks and other pamphlet displays at public venues with high visitor and tourist traffic such as City Hall, the Library, Texas Discovery Gardens, the Dallas Aquarium and Fair Park. These kiosks are stocked with brochures that address a variety of environmental topics. The kiosks contain educational stormwater pollution prevention brochures, flyers, and newsletters. During this permit term, **9,341** pieces of stormwater educational material were distributed in this manner. The City also setup a kiosk and the traveling exhibitions at the Texas Discovery Gardens during the State Fair of Texas where **2,555** visitors obtained stormwater pollution prevention education.

### G (1) c.3 - *Media-based Outreach*

The success of the SWMP is dependent on the ability to disseminate timely and relevant information in a manner that is readily understood by the targeted audience(s). The City uses a variety of print and electronic media to disseminate program information. The use of multiple media sources expands the reach of the program, reinforces the SWMP's SCMs and encourages positive behavior concerning surface water resources. Media are developed to support the various technical and educational campaigns and are regularly updated to address current issues within the program.

The City evaluates the effectiveness of the existing advertising campaign program in changing behaviors concerning stormwater by tracking the number of people reached, website activity, and feedback received about the campaign. During this reporting period, the stormwater pollution prevention message reached **195,312** people through outreach efforts in the community, schools, businesses, municipal staff education, construction and industrial staff education, volunteer programs, brochure distribution, and website visits. The City will continue incorporating water quality results, trends from facility and site inspections, feedback from the public, and website activity into continuous campaign adjustments.

- ***Advertising campaign*:** The Outreach advertising campaign included **1,514** radio ads aired on 15 radio stations, **59** print ads in 15 publications, **1,208** television ads aired on 14 cable stations, and online banners, streaming banners , and tile ads on websites. The campaign also included **7,649** ads, featuring four different messages, shown on 24 movie screens at 2 local movie theaters and **463,089** ads on 10 electronic billboards around the city.
- ***Stormwater web presence***: There were approximately **51,864** visits to the stormwater websites (www.trinity-trudy.org and www.wheredoesitgo.com). During this permit term, a the website was updated four times to revise the stormwater program description, update the watershed maps, a link to the new MS4 Permit, and provide access to the new Stormwater Management Plan with a request for citizen comment.
- ***Print publications:*** City developed **12** print publications in this permit term (including newsletters, articles, water bill inserts, school book covers, and brochures). In addition to printing and distributing the City's quarterly Stormwater newsletters at events and presentation and in kiosks; they are also distributed electronically by email and posted on the two Stormwater websites, www.trinity-trudy.org and www.wheredoesitgo.com. Samples of these materials are included in **Appendix D**.

### G (1) d - Household Hazardous Waste

Improper disposal of hazardous and non-hazardous household substances also has the potential to degrade water quality in the MS4. The City facilitates operations of the Dallas County Home Chemical Collection Center to "*continue to implement a public education and outreach program component to promote, publicize, and facilitate: 2) the proper management and disposal of used oil and household hazardous wastes;"* [Part III.B.2.g.i.B. 2) of Permit No. WQ0004396000].

The Dallas County Home Chemical Collection Center (HCCC) provides a convenient and local disposal option for community members to properly dispose of household hazardous and non-hazardous substances. Encouraging participation in City-sponsored waste collection days as well as use of the HCCC for waste disposal, removes hazardous and non-hazardous substances from potentially impacting water quality in the MS4.

The City provides funding to the Dallas County Home Chemical Collection Center (HC3) to support the Dallas County Household Hazardous Waste (HHW) Program, and promotes and assists collection events. The program focuses on decreasing improper disposal of household hazardous chemicals and used oil. Promoting this facility helps to educate residents on proper use, care and disposal of these materials.

During the reporting period, the Dallas County HC3 Program collected and properly disposed of approximately **3,211,573** pounds **(1,606** tons) of household hazardous waste, hazardous paint, and electronic waste; **7,450** gallons of used cooking oil; **26,444** gallons of used oil and antifreeze (automotive fluids); **3,147** auto batteries and **12,025** oil filters.

A total of **32,648** households used the HC3 Program during the permit period. Dallas County estimates that **15,656** households, or approximately **48**% of the total participants were City of Dallas residents.

Dallas County operates the HC3 Program facility as a central waste collection center. In addition to hosting several one-day collection events, the HC3 center is open Tuesdays, Wednesdays, Thursdays and the 2$^{nd}$ and 4$^{th}$ Saturdays of each month year-around. Collection services are provided free-of-charge to residents of Dallas County HC3 participating cities.

The City hosted two **(2**) one-day HHW collection events at the Southwest Center Mall. Five hundred and twenty-two (**522**) households participated in these events; three hundred and ninety-six (**396**) of the participants resided within the City of Dallas. Dallas residents properly disposed of approximately **67,640** pounds **(33.8** tons) of household hazardous waste, hazardous paint, and electronic waste; **25** gallons of used cooking oil; **373** gallons of used oil and antifreeze (automotive fluids); **71** auto batteries and **400** oil filters during these two events.

### G (1) e - Facilitate Public Reporting and Response

The Outreach section promotes public use of the 311/911 system for receiving and dispatching notice of hazardous and non-hazardous spills in order to "*continue to implement a public education and outreach program component to promote, publicize, and facilitate: 1) public reporting of illicit discharges or improper disposal of materials, including floatables, into the MS4;"* [Part III.B.2.g.i.B.1of Permit No. 0004396000]. These systems are actively promoted by the outreach and service response personnel as the most efficient way of reporting incidents, because the calls are tracked in the Customer Response Management System (CRMS), and responses are generally made in a more-timely manner. Information on the numbers and types of calls received through the 3-1-1 system may be found under Section C – Illicit Discharges.

## G (2) Public Participation and Involvement

The City engages the community in stormwater related activities to encourage the protection and enhancement of stormwater quality. The program includes opportunities for a wide variety of people who live, work and play in Dallas to participate in the SWMP development and implementation, consistent with the related permit requirement: "*include opportunities for a wide variety of constituents within the MS4 area to participate in the SWMP development and implementation"* [Part III.B.2.g.ii of Permit WQ0004396000].

The City has provided opportunities for volunteer involvement, and has also actively solicited input and feedback to the SWMP update and revision process.

### G (2) a - Volunteer Opportunities

The City promotes increased community awareness and protection of stormwater quality by encouraging participation in the storm drain marking program, by schools, scouts and other interested business volunteers. The City also coordinates volunteer efforts that promote environmental stewardship in and around the Trinity River. Some of the efforts include tree plantings and river clean-ups. During this permit term, **140** volunteers planted trees along the Santa Fe Trestle Trails and **165** volunteers cleaned up the Trinity Trails and the Trinity Overlook Park.

The City also facilitates volunteer participation in the Texas Stream Team Volunteer Water Quality Monitoring Program (formerly "Texas Watch"). These activities are part of a state-wide program that promotes watershed stewardship by soliciting volunteers to monitor ambient water quality in local creeks, lakes, and rivers. Volunteers monitor for: pH, air temperature, water temperature, conductivity, and dissolved oxygen, and make field observations.

#### G (2) a.1 - *Storm Drain Marking*

The City also promoted storm drain marking as a way of fostering stewardship and raising awareness concerning illicit discharges flowing into storm drains. In this permit term, the City conducted 7 storm drain marking trainings and marking events for **152** volunteers. A total of **383** storm drain inlets were marked through this program during the reporting period.

#### G (2) a.2 - *Texas Stream Team*

The City continued to facilitate the Texas Stream Team Volunteer Water Quality Monitoring Program (formerly "Texas Watch") during this reporting period. These activities are part of a state-wide program that promotes watershed stewardship by soliciting volunteers to monitor ambient water quality in local creeks, lakes, and rivers. Volunteers make field observations and monitor for: pH, air temperature, water temperature, conductivity, and dissolved oxygen. During this permit term, the City conducted 4 training classes, and a combined City/Volunteer effort of **177** monitoring events, at 20 locations as a part of the Texas Stream Team Program. The City also audited performance under this program, including mapping volunteer sample locations, and planning for a Dallas Meeting of the Monitors that will take place in early PY2.

Table 1-G.2, on the following page, summarizes the Texas Stream Team training and stream monitoring efforts.

| Table 1-G.2. Texas Stream Team Monitoring Activities | | |
|---|---|---|
| | Monitoring Events | |
| Date | City | Volunteers |
| February 11 | 1 | 6 |
| March 11 | 1 | 6 |
| April 11 | 1 | 4 |
| May 11 | 1 | 7 |
| June 11 | 1 | 5 |
| July 11 | 1 | 6 |
| August 11 | 1 | 6 |
| September 11 | 1 | 5 |
| October 11 | 1 | 8 |
| November 11 | 1 | 8 |
| December 11 | 0 | 8 |
| January 12 | 1 | 8 |
| February 12 | 1 | 9 |
| March 12 | 1 | 7 |
| April 12 | 0 | 9 |
| May 12 | 1 | 1 |
| June 12 | 1 | 11 |
| July 12 | 1 | 16 |
| August 12 | 1 | 13 |
| September 12 | 1 | 16 |
| TOTAL | 18 | 159 |

### G (2) b - SWMP Development and Public Involvement

SWMPs can be a great tool to use in fostering community stewardship of the streams and creeks of their neighborhoods. The SWMP is also improved by involving the community into the process of developing and implementing the program. The public gains greater insights into the program challenges, and the program in turn, gains insights into the community's priorities. The City engaged the public in the development of the SWMP by providing related information on the City's websites and newsletter, and by providing a web portal to solicit input into the new draft SWMP.

The City provided information at four different Spring events in April and May (including Earth Fest, Green Fest, the Dallas Home and Garden Show, and Cinco de Mayo), and placed the draft SWMP at the public library, to provide information concerning program activities, and to solicit feedback to be used to develop future annual SWMP updates. To date, only minor comments have been provided, and have been incorporated accordingly.

### G (2) c Outreach Program Evaluation

To help assess the overall effectiveness of the outreach and education program, **904** people who live and/or work in Dallas were surveyed at 32 different public events. **Table 1-G.1** outlines the types of events where surveys were distributed. Two survey topics were landscape chemicals and pet waste. The surveys were used to determine how Dallas citizens currently apply landscape chemicals, dispose of pet waste, and their attitudes toward the topics. The surveys also assess the perceived barriers and benefits citizens have towards proper application of landscape chemicals and disposal of pet waste. Of the **904** Surveys taken, **93** percent of the survey takers indicated a commitment to start applying landscape chemicals in accordance with the product's label directions and disposing of pet waste properly.

| Table G-1<br>Summary of Performance: MCM 7 - Public Education and Outreach/Public Involvement Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **G (1) Public Education and Outreach** | | | |
| **G (1) a.1 - Community Education** | | | |
| 1. Present one (1) annual presentation to community organizations in each of the five (5) target programs:<br>• Illicit discharge (IDDE)<br>• Pesticides, herbicides and fertilizers (PHF)<br>• Used Oil Toxic Materials (UOTM)<br>• Pet waste<br>• Yard waste | Number of presentations for each program, and attendees | Permit Year (PY) 1 - PY 5 | Presented **54** community presentations and events to **5,743** resident participants.<br>• **8** - Illicit discharge (IDDE)<br>• **16** - Pesticides, herbicides and fertilizers (PHF)<br>• **6** - Used Oil Toxic Materials (UOTM)<br>• **4** - Pet waste<br>• **3** - Yard waste<br>Also presented community presentations and events in the following programs.<br>1 – Litter & Floatables<br>**16** – General Stormwater Education |
| **G (1) a. 2 - School Education** | | | |
| 1. Present five (5) educational presentations per year to K-12 students within the City's watersheds, including assemblies, camps, story time, and library events. | Number and geographic distribution of presentations | PY1 - PY5 | **48** educational presentations to **2,395** K-12 students.<br>Presented education to university-level, teachers, and school facility management staff.<br>• 6 classes to 178 university-level students<br>• 2 presentations to 54 teachers<br>• 3 workshops to 117 facility management staff |

| Table G-1<br>Summary of Performance: MCM 7 - Public Education and Outreach/Public Involvement Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| **A.3 Business Education** | | | |
| 1. Present one (1) annual presentation to businesses/ trade organizations in each of the five (5) target programs:<br>• Illicit discharge (IDDE)<br>• Pesticides, herbicides and fertilizers (PHF)<br>• Used Oil Toxic Materials (UOTM)<br>• Yard waste<br>• Animal waste | Number and geographic distribution of presentations | Permit Year (PY) 1 - PY 5 | Presented **7** presentations and events to **1,597** business/trade organizations participants.<br>• 4 - Illicit discharge (IDDE)<br>• 0 - Pesticides, herbicides and fertilizers (PHF)<br>• 1 - Used Oil Toxic Materials (UOTM)<br>• 0 - Yard waste<br>• 0 - Animal waste<br><br>In additional to 5 target programs, also presented 2 General Stormwater education presentations. |
| **G (1) b - Technical Training** | | | |
| **G (1) b.1 - Construction Site Operator Program** | | | |
| 1. Present two (2) workshops to contractors, operators and construction site affiliated personnel on acceptable construction site SCMs, per year. | # of workshops provided and number of attendees | PY1 - PY5 | **8** Construction Workshops to **244** contractors, operators, and construction site affiliated personnel. |
| 2. Present on-site consultations to operators and construction site personnel on site-specific construction site SCMs, per year. | # of consultations provided and number of attendees | PY1 - PY5 | **114** on-site consultations to **185** to operators and construction site personnel. |

| Table G-1<br>Summary of Performance: MCM 7 - Public Education and Outreach/Public Involvement Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| 3. Present on-site tail-gate training sessions to operators and construction site personnel on acceptable construction site SCMs, per year. | # of tailgate training sessions provided and number of attendees | Permit Year (PY1) 1 - PY5 | Presented 9 on-site tail-gate training sessions to **71** operators and construction site personnel. |
| **G (1) b.2 - Industrial Operator Workshops** | | | |
| Present two (2) workshops to industrial operators on TPDES stormwater permit requirements, per year. | Workshops provided and number of attendees | PY1 – PY5 | Presented 5 workshops to 195 industrial operators. |
| **G (1) b.3 - Municipal Staff Training (Inreach)** | | | |
| 1. Publish two (2) electronic announcements addressing stormwater management, per year. | # of Announcements published | PY1 – PY5 | Published 12 electronic announcements |
| | Topic(s) of announcements published | PY1 – PY5 | Used Oil and Toxic Materials (SW301 Online Training Module). |
| 2. Provide two (2) internal training events on current stormwater issues, per year. | # training events and attendees | PY1 – PY5 | Provided 8 internal training events to 204 municipal staff members. |
| 3. Educate employees about stormwater pollution prevention practices. | Number of employees completing "Stormwater Awareness Training" during new employee orientation | PY1 – PY5 | Educated **1,252** employees during new employee orientation.<br>**89** employees learned about stormwater pollution prevention by taking the stormwater online modules. |

| Table G-1<br>Summary of Performance: MCM 7 - Public Education and Outreach/Public Involvement Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| 4. Provide at least one (1) internal and one (1) community training on spill prevention, per year. | Training events conducted on Spill Prevention and number of attendees | Permit Year (PY) 1 - PY5 | Conducted 9 Spill Response and 1 Fish Kill training classes for 206 employees. |
| 5. Provide at least one (1) internal City spill response training, per year. | Training events conducted on Spill Response and number of attendees | PY1 – PY5 | Provided 1-40 hour and 1-8 hour refresher Hazwoper training classes. |
| 6. Identify City employees certified to perform incident response. | Number(s) of staff trained and types of certifications | PY1 – PY5 | 28 staff trained to perform incident response. |
| **G (2) Public Participation/Involvement** | | | |
| **G (2) a - Volunteer Opportunities** | | | |
| 1. Encourage participation in the Texas Stream Team volunteer water quality monitoring program within the City limits of Dallas. | # of Texas Stream Team trainings and recertified members | PY1 – PY5 | 4 Texas Stream Team training classes offered |
| | Number of participants and watersheds represented | PY1 – PY5 | 45 citizens completed Texas Stream Team certification classes. |
| 2. Encourage participation in the storm drain marking program. | Number of participants and watersheds represented | PY1 – PY5 | 7 Storm Drain Marking events in 5 different watersheds with 152 participants |
| | # of Storm drains marked | PY1 – PY5 | 383 storm drains marked |
| **G (2) b - SWMP Development/Public Involvement** | | | |
| 1. Develop update to website(s) to solicit public input. | Update(s) made, and comments received | Permit Year 1 , 3 and 5 | 1 website update soliciting public input in SWMP development; 4 events also used.<br>Minimal comments received from citizens. |

| Table G-1<br>Summary of Performance: MCM 7 - Public Education and Outreach/Public Involvement Activities | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period (Feb. 22, 2011 Through Sept. 30 2012)** |
| 2. Develop newsletter article(s) to solicit public input | Article(s) printed, and comments received | Permit Year 1 – Permit Year 5 | 1 newsletter article developed to solicit public input SWMP development.<br>Minimal comments received from citizens. |
| **G (2) a Education and Outreach Program Evaluation** | | | |
| 1. Evaluate the existing stormwater education program for effectiveness and make recommendations for potential changes to the SWMP in the annual report. | Number of people reached determined by attendance | Permit Years 1, 3 and 5 | **130,395** people reached |
| | Document geographic distribution of outreach program activities in correlation with annual water quality data | Permit Years 2 and 4 | NA |

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# *MCM/ Element 8 - Monitoring, Evaluation and Reporting*

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## H. MCM 8 - Monitoring, Evaluation and Reporting

The City maintains a comprehensive monitoring program in order to obtain the data needed to guide program implementation, and to evaluate water quality improvement degradation or improvement over time. The program meets and exceeds the permit requirements to "*implement…monitoring and screening programs for dry weather, wet weather, industrial and high risk runoff" [Part III.B.2.h of TPDES Permit No.WQ0004396000].*"

The City's water quality monitoring program includes storm event discharge monitoring under Option 1, participation in the Regional Wet Weather Characterization Program (RWWCP) *[Part IV.A.1 of TPDES Permit No.WQ0004396000]*, along with local wet weather monitoring within all 12-digit Hydrologic Unit Code (HUC) - defined watersheds that comprise a portion of the Dallas permit area at least once during the permit term. Rapid bioassessment protocol monitoring is also performed during the spring and summer sampling periods within in all 12-digit HUC-defined watersheds in Dallas every year. Additional quarterly monitoring is performed along the Trinity River through Dallas in support of Total Maximum Daily Load (TMDL) assessment, in accordance with the QAPP for the Texas Clean Rivers Program (TCRP) as implemented by the Trinity River Authority (TRA). The water quality data obtained through these efforts are used to guide other programmatic screening, BMP evaluation and outreach efforts.

### H (1) Dry Weather Screening

The City's dry weather screening program focuses on identifying and eliminating illicit connections and improper discharges to the MS4. The program meets the permit requirements to "*continue efforts to detect the presence of illicit connections and imporper discharges to the MS4. The permittee shall identify high risk and high priority areas, which shall include, but not be limited to heavy commercial and heavy industrial areas. These high risk, and high priority areas must be screened at least once per permit term" [Part III.B.2.h.i of TPDES Permit No.WQ0004396000].* Watersheds are prioritized for dry-weather screening by age of the neighborhood, age and condition of the infrastructure, and areas with heavy industrial and commercial land uses.

The screening process includes the use of geospatial technology to locate outfalls, recording any observations of discharge from the outfall, and sample collection. Collected samples are sent to a contracted laboratory for analysis. The source of the flow is investigated based on the analytical data, and is traced to the source, using cctv equipment. In the case where an improper discharge is identified, the City notifies the owner/operator of the discharge source and requires them to correct the problem. The City conducts a follow-up inspection to verify that the problem has been corrected.

During the reporting period, through the dry weather screening program, the City monitored **4,515** discharge locations in 22 HUC-12 watersheds and found **317** outfalls that discharged directly into a waterway during dry weather. Of these outfalls, a total of **2** were determined to be illicit discharges. Table 1-H.1 on the next page, summarizes the City's dry weather screening efforts during the reporting period.

| Table 1-H.1 Dry Weather Screening Activities | | | | |
|---|---|---|---|---|
| **12 Digit HUC Watershed** | **Watershed** | **# of Outfalls Inspected** | **# of Outfalls with Drainage** | **#Illicit Discharges** |
| **Lower West Fork Trinity River (Texas Stream Segment 0841)** | | | | |
| Low Branch Mountain Creek | LBMC | 2 | 0 | - |
| Fish Creek-Mountain Creek Lake | FCMCL | 54 | 3 | - |
| Cottonwood Creek-Mesquite Creek Lake | CCMCL | 22 | 0 | - |
| Delaware Creek-West Fork Trinity River | DCWF | 36 | 1 | - |
| **Elm Fork Trinity River (Texas Stream Segment 0822)** | | | | |
| Indian Creek-Elm Fork Trinity River | ICEF | 81 | 10 | - |
| Grapevine Creek-Elm Fork Trinity River | GCEF | 24 | 3 | - |
| Farmers Branch-Elm Fork Trinity River | FBEF | 17 | 1 | - |
| Bachman Branch-Elm Fork Trinity River | BBEF | 419 | 46 | - |
| **White Rock Creek System (Texas Stream Segment 0827)** | | | | |
| Headwaters-White Rock Creek | HWRC | 168 | 16 | - |
| Floyd Branch-White Rock Creek | FBWRC | 621 | 51 | - |
| White Rock Creek-White Rock Lake | WRCWRL | 363 | 14 | - |
| **Main Stem Trinity River (Texas Stream Segment 0805)** | | | | |
| Headwaters-Turtle Creek | HTC | 406 | 61 | - |
| Turtle Creek-Trinity River | TC | 510 | 55 | - |
| **Five Mile Creek System (Unclassified Water Body)** | | | | |
| Headwaters Five Mile Creek | HFC | 818 | 28 | 1 |
| Five Mile Creek-Trinity River | FMC | 370 | 18 | - |
| **Other Unclassified Creeks** | | | | |
| Hickory Creek - Parsons Slough | HCPS | 81 | 0 | - |
| Upper Prairie Creek - Trinity River | UPC | 344 | 3 | - |
| Headwaters Ten Mile Creek | HTM | 52 | 2 | - |
| **Lake Ray Hubbard (Texas Water Segment 0820)** | | | | |
| Duck Creek | DC | 38 | 2 | 1 |
| **East Fork Trinity River (Texas Stream Segment 0819)** | | | | |
| Mustang Creek - East Fork Trinity River | MCEF | 10 | 0 | - |
| South Mesquite Creek | SMC | 29 | 3 | - |
| | **TOTAL:** | **4,515** | **317** | **2** |

Through the reporting period Dry Weather Screening Program, a total of **141** new outfalls were identified and **317** outfalls with a discharge occurring during dry weather were observed. The Headwaters-Turtle Creek watershed comprised only nine (**9**) percent of the total outfalls inspected but accounted for nineteen (19) percent of the outfalls with dry weather discharge. With the exception of the identified illicit discharges, the observed flows were generally natural flows, i.e. groundwater infiltration or runoff.

As discussed in Section 3, an additional **825** illicit discharge investigations were conducted in response to customer service requests concerning chemical spills, illegal dumping, and abandoned substances. A total of **186** illicit discharges were detected through a combination of the dry weather inspection program and responses to citizen service requests. Table 1-H.2, includes examples of some of the illicit discharges during the reporting period. Staff also collected water quality samples in response to citizen complaints regarding surface water quality. SWM collected a total of **691** samples as a result of SWMP activities, special surface water quality projects, customer complaints/service requests, and fish kills.

**Table 1-H.2 Examples of Illicit Discharge Detection and Elimination Activities**

| HUC-12 Watershed | Address | Date | Identified Discharge | Date IDDE Resolved |
|---|---|---|---|---|
| Bachman Branch-Elm Fork Trinity River | 4100 Dunnhaven Road | 9/25/2012 | Bulk ink discharge | 9/25/2012 |
| Headwaters White Rock Creek | 4240 S. Capistrano | 8/8/2012 | Hydraulic fluid spill | 8/9/2012 |
| City of Dallas-White Rock Creek | 7131 Shook Avenue | 4/23/2012 | Concrete slurry | 4/24/2012 |
| White Rock Creek – Trinity River | 811 Pemberton Hill | 5/2/2012 | Goat and chicken blood, hair, feathers and entrails | 5/3/2012 |
| White Rock Creek-White Rock Lake | 8080 N. Central Expy. | 10/28/2011 | Diesel fuel | 10/31/2011 |
| Headwaters Turtle Creek | 5710 Velasco Avenue | 4/25/2012 | Construction site sediment | 4/27/2012 |
| Turtle Creek – Trinity River | 2708 E. 11th | 12/10/2012 | Pig blood, hair, and entrails | 1/19/2012 |
| Upper Prairie Creek-Trinity River | 2807 Kingsford Avenue | 11/16/2011 | Yard waste | 11/21/2011 |
| Headwater Five Mile Creek | 4728 Clear Creek | 1/11/2012 | Transmission fluid | 1/13/2012 |
| Five Mile Creek-Trinity River | 6168 Bonnie View Road | 5/9/2012 | Private sewage leak | 5/10/2012 |

**H (2)/(4) Wet Weather Screening and Characterization**

The City implements Wet Weather screening and characterization in accordance with permit requirements to "*Identify, investigate, and address areas within their jurisdiction that may be contributing excessive levels of pollutants to the MS4. The wet weather program must: (A) screen the MS4 as specified in the SWMP; and (B) specify the sampling and non-sampling techniques to be used for current screening and follow-up screening*" *[Part III.B.2.h.ii of TPDES Permit No.WQ0004396000].*

The City's wet weather program includes sampling participation in the NCTCOG Regional Wet Weather Characterization Program (RWWCP) and local wet weather sampling within each of the 32 12-digit Hydrologic Unit Code-defined watersheds with land that is wholly, or partially contained within the Dallas MS4.

**H (2) a - Regional Wet Weather Characterization Program**

Participation in the Regional Wet Weather Characterization Program (RWWCP) was offered as an option in Part IV.A.1 of the TPDES Phase I MS4 permits that were issued to cities located within the NCTCOG region. The RWWCP is implemented by the NCTCOG, and all data associated with this program is reported to the TCEQ by NCTCOG on behalf of the participating entities.

During the reporting period, the City participated in this program by monitoring at total of six (**6**) sites, in accordance with the RWWCP Sampling and Analyses Plan (SAP): three (**3**) sites in the Headwaters Turtle Creek watershed and three (**3**) sites in the Turtle Creek-Trinity River watershed. Table 1-H.3 provides a summary of the wet weather screening activities conducted in PY1 as a part of the RWWCP. The City submitted the data to the NCTCOG RWWCP program on a quarterly basis as it was collected. ***The NCTCOG compiled the City data with the regional data and transmitted the RWWCP data set to the TCEQ on February 26, 2011.*** The water quality sample results are listed by watershed and sample location in Table E-1c and Table E-1d in **Appendix E**.

**Table 1-H.3 Regional Wet Weather Sample Collection Activities**

| 12 Digit HUC Watershed | Sample ID | Site | Date(s) Sampled |
|---|---|---|---|
| Headwaters Turtle Creek | HTC-100* | 3505 Maple Avenue | 2/3/2012, 5/11/2012, 8/15/2012 |
| | HTC-200* | 1201 Turtle Creek Boulevard | 2/3/2012, 5/11/2012, 8/15/2012 |
| | HTC-300* | 2240 Irving Boulevard | 2/3/2012, 5/11/2012, 8/15/2012 |
| Turtle Creek-Trinity River | TCTR-100* | 3805 Pipestone Road | 1/24/2012, 4/15/2012, 7/20/2012 |
| | TCTR-200* | 3951 La Reunion Parkway | 1/24/2012, 4/15/2012, 7/20/2012 |
| | TCTR-300* | 4300 Singleton Boulevard | 1/24/2012, 4/15/2012, 7/20/2012 |

**H (2) b - Local Wet Weather Screening**

The City monitored wet weather events through a local wet weather-screening program designed to identify and investigate areas that may contribute excessive levels of pollutants to the MS4, and to establish baseline data on receiving streams in the Dallas area that may be used to evaluate long-term water quality trends. The City is required to perform bi-annual wet weather screening from each watershed that is located entirely within the City limits at least once per term. The City obtained wet weather sampling in eight (8) watersheds during the reporting period. **Table 1-H.4**, on the following page provides a summary of the local wet weather sample collection activities screened during the reporting period.

| Table 1-H.4 Local Wet Weather Sample Collection Activities | | | |
|---|---|---|---|
| **12 Digit HUC Watershed** | **Sample ID** | **Site** | **Date(s) Sampled** |
| Bachman Branch-Elm Fork Trinity River | NWDA1 | 2300 W. Northwest Hwy. | 4/11/2011, 10/17/2011 |
| | NWDA2 | 10430 Bickham Road | 4/4/2011, 9/16/2011 |
| | NWDA3 | 10600 Luna Road | 4/4/2011, 9/29/2011 |
| | JOES1 | 2300 Stemmons Trail | 5/11/2011, 9/16/2011 |
| | UBAC1 | 8900 Midway Road | 5/11/2011, 10/9/2011 |
| | LBAC1 | 9400 Harry Hines Boulevard | 5/11/2011, 10/23/2011 |
| City of Dallas-White Rock Creek | LWRC1 | 5100 C. F. Hawn Frwy. | 6/21/2011, 11/21/2011 |
| Delaware Creek-West Fork Trinity River | MLCD1 | 6000 W. Jefferson Boulevard | 5/20/2011, 10/27/2011 |
| Floyd Branch-White Rock Creek | UMWR1 | 8000 Greenville Avenue | 5/20/2011, 12/19/2011 |
| Headwaters Five Mile Creek | UFIV1 | 5400 Lancaster Road | 6/21/2011, 1/9/2012 |
| Headwaters Ten Mile Creek | UTEN1 | 400 Bluegrove Road | 6/21/2011, 11/7/2011 |

Results of sample analyses are used as an input into targeted programmatic response including outreach, compliance inspections and, as necessary, enforcement. In the future, this data may be compared against similar tables for the other watersheds to gage overall improvement or degradation of the City's surface water quality. The water quality sample results are listed by watershed and sample location in Table E-1a and Table E-1b in **Appendix E**.

### H (3) Industrial and High Risk Monitoring Program

The City's industrial and high risk monitoring program evaluates the water quality of discharges to the MS4 by permitted industrial facilities that may contribute substantial pollutant loads to the MS4. The City does not perform the actual sampling for these sites, but typically reviews either the data or the "No Exposure" certifications provided by the permitted facilities. Data are reviewed for compliance with the individual facility permit requirements and the TPDES Multi-Sector General Permit.

Identified facilities eligible for NPDES/TPDES stormwater discharge permit coverage are requested to submit analytical monitoring data to the City for review. The City uses a central database to track industrial applications and permits. The City conducted industrial inspections at **435** facilities requiring No Exposure Certification (NEC) or permit coverage according to the NPDES/TPDES Multi-Sector General Permit for Industrial Activities. The City identified **191** facilities which were required to submit water quality sampling results to the City. Of the facilities identified, **126** facilities submitted sampling results to the City. The City required facilities that exceeded the benchmark reporting limits by more than 10 percent to increase the number of stormwater sampling events and to develop action plans on how to reduce the level of parameters found in their facility's stormwater runoff.

### H (5) Floatables Monitoring

As described in MCM1, Structural controls, the City uses a variety of activities to: *"reduce the discharge of floatables (e.g., litter and other human generated solid refuse) into the MS4. The permittee shall include source controls and, where necessary, structural controls and other appropriate controls where necessary* [Part III.B.2.a.ii of TPDES Permit No. WQ0004396000]." Floatables form the most visible indication of man-made pollution to surface water.

The City maintains, monitors and cleans three (3) litter booms, one each at Bachman Lake, Williamson Branch Creek at White Rock Lake, and at Lake Cliff Park. Monthly monitoring, routine inspections, and regular maintenance (twice per year at a minimum) and cleaning of the litter booms prevents debris from entering the MS4. Each site includes a litter boom that floats at or near the water surface and extends across the width of the creek to trap floating materials. The City regularly monitors the condition of each boom. As needed, each site is cleaned when the areas adjacent to the booms allow equipment access without damaging the adjacent shoreline.

### H (6) Rapid Bioassessment Protocol Sampling

The City SWMP also performs rapid bioassessment protocol (RBP) monitoring as a part of the RWWCP, and to obtain a complete dataset each year for all of the watersheds that are wholely contained within the MS4. The City uses the rapid bioassessment protocols (RBP) as set forth in the TCEQ "Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Community and Habitat Data (TCEQ, 2007, RG-416). The RBP monitoring evaluates the chemical, physical, and biological in-stream features that promote a healthy and diverse habitat; as such they provide a good assessment of overall watershed health. The RBP monitoring program involves performing an Aquatic Life Use (ALU) assessment through benthic macro-invertebrate collection, habitat assessment, and evaluating water quality samples from **21** of the 12-Digit HUC Code watersheds within lands within the City boundaries. **47** sample sites were assessed through water quality samples only, and **26** sites were assessed using biological sampling, as well as water quality samples and habitat assessments.

The City's SWMP requires sample collection from at least two water bodies that receive MS4 discharges plus a reference site. The City selected four designated reference sites based on geographical coverage, historical data, similar habitat, and perennial flow. A table listing the reference sites used for the RBP is included in Table E-2 in Appendix E.

Two sampling events were conducted in accordance with the index periods established by TCEQ for biological sampling:

- **Spring Period** (March 15$^{th}$ to June 30$^{th}$): Targets spring's optimal conditions for biological community growth.
- **Summer Period (**July 1$^{st}$ to September 30$^{th}$): Reflects impacts from typical summer low flows and higher water temperatures.

Under the RBP, each water body is given a composite score that is determined through evaluation of numbers and diversity of macro invertebrates, water quality parameters, stream habitat features and other metrics. A sample of each monitoring site's macro invertebrate community determines the sites' Aquatic Life Use (ALU) metric. Since 2005, the City of Dallas has used the Benthic Macro-invertebrate Index of Biotic Integrity (IBI) to test ALU. A sample from each monitoring site is tested according to the IBI. Twelve (**12**) biological metrics, pertaining to insect community diversity and balance are calculated from the identification for each station. The values are tabulated for a total score, independent of the reference site that indicates the aquatic life use. Two full rapid bioassessment seasons occurred during the reporting period and are included in this report.

During the 2011 bioassessment season, there were **32** monitoring sites assessed through benthic macro invertebrate collection, habitat assessments, and evaluating water quality samples. The average aquatic life use for all monitored sites was Intermediate, with ratings ranging from Limited to High. The average ALU for the spring monitoring period was Intermediate and remained at the Intermediate level for the summer monitoring period. **20** sites (**62.5%**) remained at the same ALU level throughout the two sampling periods, **2** sites (**6%**) saw improvement in ALU from the spring to the summer period, **5** sites (**16%**) had lower ALU scores in the summer monitoring period, and **2** sites (**6%**) had insufficient flow for summer sampling.

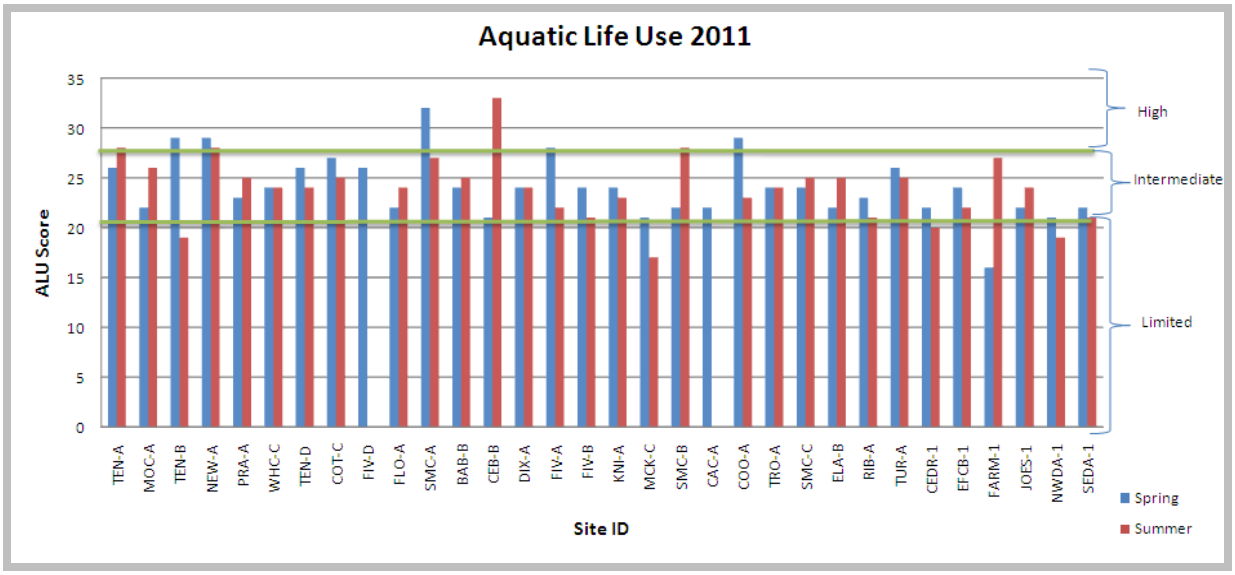


**Figure 1-5, Aquatic Life Use, 2011 Season**

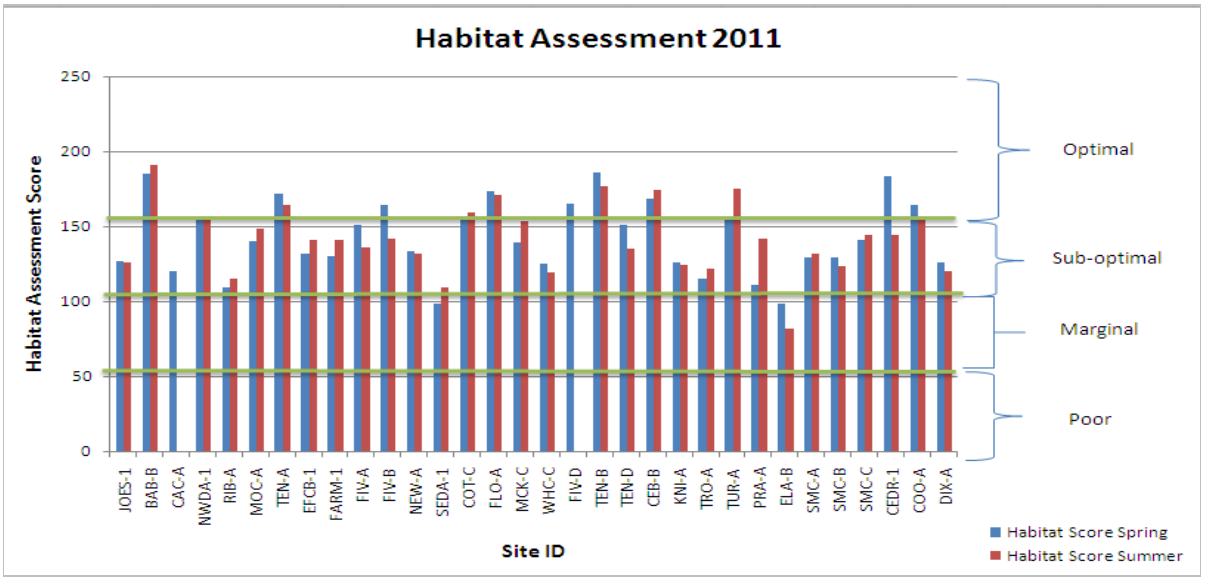


**Figure 1-6, Habitat Assessment, 2011 Season**

The 2011 Habitat Assessment statistics showed that on average, a majority, **68%** of bioassessment sites scored a sub-optimal rating for habitat assessment indicating that there is room for watershed improvement. **24%** of the sites received an optimal score (fairly decent habitat); only **8%** received a marginal rating.

During the 2012 bioassessment period, there were **26** monitoring sites assessed through benthic macro invertebrate collection, habitat assessments, and evaluating water quality samples. The average aquatic life use for all monitored sites was Intermediate, with ratings ranging from Limited to High. The average ALU for the spring monitoring period was Intermediate and remained at the Intermediate level for the summer monitoring period. **14** sites (**54%**) remained at the same ALU level throughout the two sampling periods, **10** sites (**38%**) saw improvement in ALU from the spring to the summer period, **5** sites (**19%**) had lower ALU scores in the summer monitoring period and **1** site (**3%**) had insufficient flow for summer sampling.

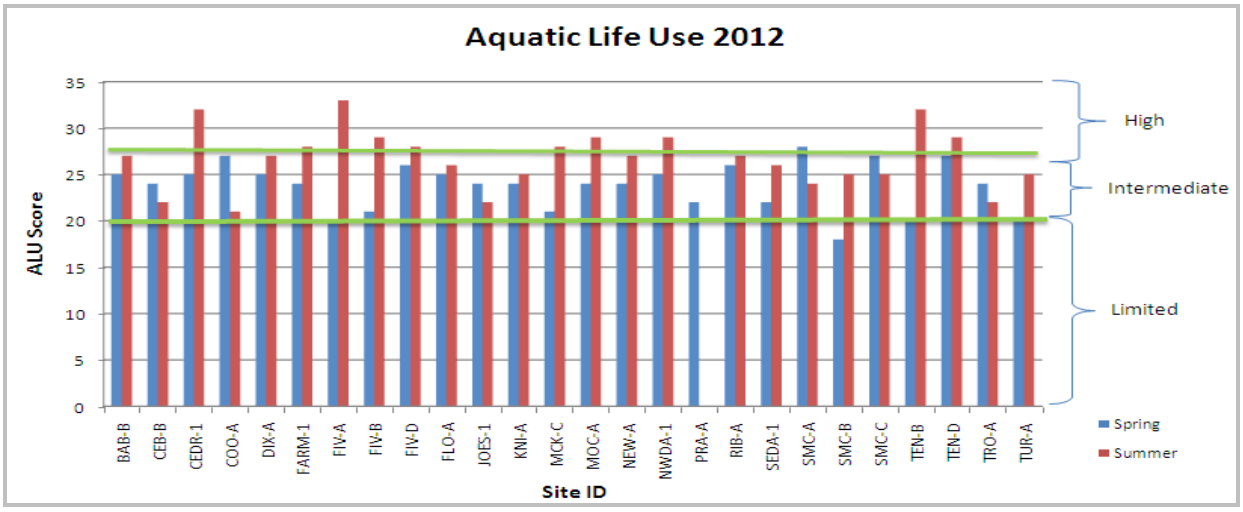


**Figure 1-7, Aquatic Life Use, 2012 Season**

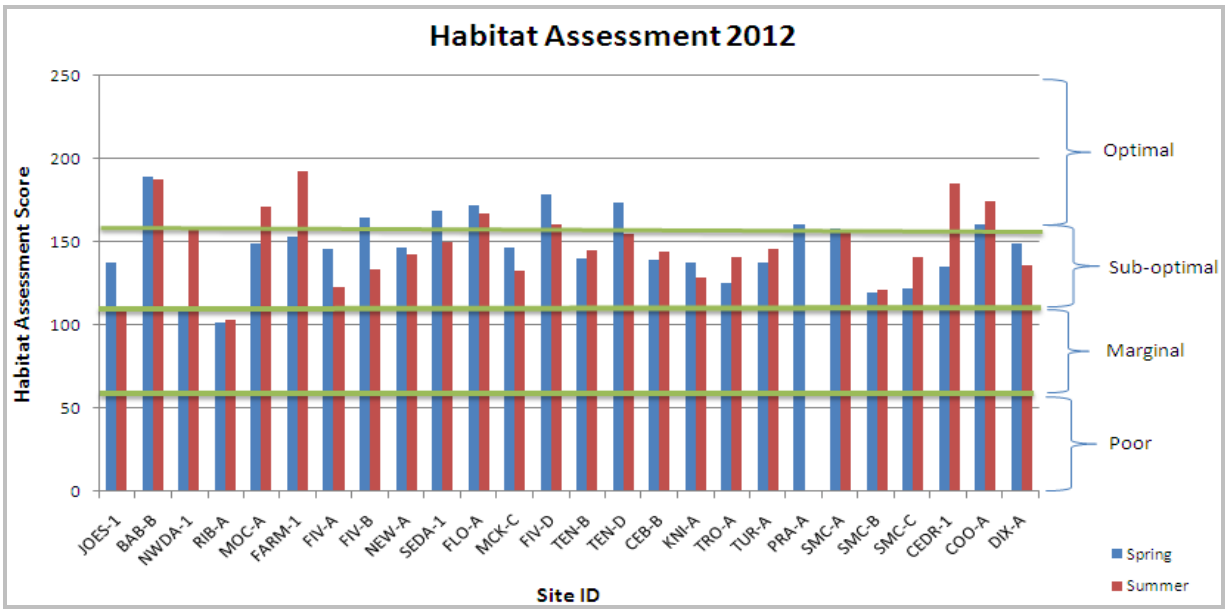


**Figure 1-8, Habitat Assessment, 2012 Season**

The 2012 Habitat Assessment statistics showed that on average, a majority, **65%** of bioassessment sites scored a sub-optimal rating for habitat assessment indicating that there is room for watershed improvement. **29%** of the sites received an optimal score (fairly decent habitat); only **6%** received a marginal rating.

Table 1-H.5, provides a summary of the ALU statistics for the two bioassessment sampling seasons during this reporting period. Data comparison of the 2011 and 2012 bioassessment periods indicated that in 2012, **32%** more sites saw improvement in ALU levels from the spring to the summer period.

**Table 1-H.5 Aquatic Life Use Comparison**

| ALU Value | Spring | | | | Summer | | | |
|---|---|---|---|---|---|---|---|---|
| | 2011 | | 2012 | | 2011 | | 2012 | |
| **Minimum** | 16 | Limited | 18 | Limited | 17 | Limited | 21 | Limited |
| **Maximum** | 32 | High | 28 | High | 33 | High | 33 | High |
| **Mean** | 24 | Intermediate | 24 | Intermediate | 24 | Intermediate | 27 | Intermediate |
| **Median** | 24 | Intermediate | 24 | Intermediate | 24 | Intermediate | 27 | Intermediate |
| **Standard Deviation** | 3.1 | -- | 2.6 | -- | 3.3 | -- | 3.2 | -- |

Table 1-H.6 provides a summary of the habitat assessment statistics for the two sampling periods. Data comparison of the 2011 and 2012 bioassessment periods indicated **29%** of 2012 sites received optimal habitat assessment scores as compared to **24%** of sites from 2011. Also, the marginal score increased by **2.2%** from 2011 to 2012, indicating improvement in most creeks, overall. The analyses and supporting data are included in Appendix E.

**Table 1-H.6 Habitat Assessment Comparison**

| Habitat Assessment Score | Spring | | | | Summer | | | |
|---|---|---|---|---|---|---|---|---|
| | 2011 | | 2012 | | 2011 | | 2012 | |
| **Minimum** | 98 | Marginal | 102 | Marginal | 82 | Marginal | 103 | Marginal |
| **Maximum** | 186 | Optimal | 189 | Optimal | 191 | Optimal | 193 | Optimal |
| **Mean** | 142 | Sub-optimal | 147 | Sub-optimal | 142 | Sub-optimal | 148 | Sub-optimal |
| **Median** | 139 | Sub-optimal | 147 | Sub-optimal | 142 | Sub-optimal | 145 | Sub-optimal |
| **Standard Deviation** | 24.8 | -- | 21.1 | -- | 41.5 | -- | 37.0 | -- |

Water quality samples were collected for the bioassessment program during the spring and summer sampling periods. Samples were collected from 46 different sites within 21 HUC-12 watersheds and together provide a comprehensive picture of the overall water quality for the City. These samples were analyzed for:

- Chemical oxygen demand,
- Conductivity,
- Temperature
- Dissolved oxygen,
- pH
- Copper,
- Bacteria (*E .coli,* and total coliform*)*
- Iron,
- Ammonia/ Nitrate/Nitrite,
- Phosphorous,
- Surfactants,
- Total Suspended Solids,
- Turbidity

The laboratory results from the RBP water quality evaluation indicated a decrease in total suspended solids and phosphorus from 2011 to 2012. There was also a slight increase in concentrations of *E. coli* bacteria from 2011 to 2012. Results for chemical oxygen demand, specific conductivity ammonia, turbidity, and surfactants remained

nearly the same. A map of the sample locations is included in Appendix B. These data are included in Tables E-5a, E-5b, E-6 and E-7 in Appendix E.

### H (7) TMDL Implementation Plan Support

Segments 0805-03 and 0805-04 of the Trinity River that pass through Dallas are presently included on the draft 2010 Clean Water Act Section 303(d) list of impaired waters for bacteria, and for polychlorinated bi-phenols (PCBs) in fish tissue. The Trinity River Authority currently monitors the classified waters of the Trinity River under contract with the TCEQ as a part of the Texas Clean Rivers Program. The City signed a partnering agreement with the TRA in 2011, and monitors water quality at several locations along the Trinity River through Dallas.

The City has participated in ongoing regional meetings convened by the TCEQ at the NCTCOG offices concerning the development of TMDLs for PCBs in fish tissue along the Trinity River. To date, the TMDLS for pcbs in fish tissue have not yet been finalized.

The City participated in the regional efforts to develop the TMDLs for bacteria along the Trinity River. City staff from several departments participated in the quarterly stakeholder meetings convened by the NCTCOG to develop an Implementation Plan (iPlan) to reduce bacteria in 17 classified waterbodies across the Dallas Fort Worth metroplex. The draft iPlan has been submitted to the TCEQ and the EPA for review and comment.

In support of the iPlan for bacteria, the City is conducting quarterly monitoring for bacteria along the Trinity River, at the three locations listed in Table 1-H.7. Monitoring data is computerized, checked for errors and entered into a central database for the Trinity River basin. TRA also submits data to TCEQ for incorporation into the statewide water quality database, where the data can be used in decision-making and regulatory processes. These data will be used to assess water quality improvement or degradation relative to the bacteria TMDLs. City sample results from these locations during the reporting period are included **Appendix E**.

**Table 1-H.7 Texas Clean Rivers Program**
**Trinity River Sample Locations in Dallas**

| Site Description | Station ID# | Waterbody ID | Region | LAT | LONG |
|---|---|---|---|---|---|
| Boat Ramp Located on Sylvan @ Trinity River | 20933 | 0805-04 | 04 | 32.789892 | -96.835175 |
| Standing Wave at Santa Fe Avenue/DART Rail | 20934 | 0805-04 | 04 | 32.75292 | -96.79165 |
| SH 310 Bridge at Trinity River | 20444 | 0805-03 | 04 | 32.749889 | -96.77763 |

The City used the iPlan along with data collected from the bio-monitoring program, the wet weather screening, and the TCRP to develop the interim Bacteria Reduction Plan (iBRP) to address bacteria TMDLs through Dallas. The iBRP was completed in September 30, 2012, and forms Appendix B of the SWMP.

### H (8) Effluent Limit Guidelines Implementation

In anticipation of pending federal regulations concerning Effluent Limit Guidelines for construction, the City included several BMPs in the SWMP to address these regulations. At present, the City has developed draft Standard Operating Guidelines for monitoring turbidity, and has been tracking the number of sites over 10 acres in size that would be required to provide monitoring for turbidity. These measures are in compliance with the related SWMP BMPs, but are not yet required by the MS4 permit, or by Federal stormwater rulemaking.

| Table H-1<br>Summary of Performance: MCM 8 - Monitoring, Evaluation and Reporting | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period** |
| **H (1) Dry Weather Screening** | | | |
| Investigate flows from outfalls during dry weather, sample the discharge, investigate the source, and act to eliminate the discharge. | # of Outfalls inspected, discharges found, and sources identified | Permit Year (PY) 1 - PY 5 | **4,515** Outfalls inspected in **22** watersheds<br>**317** Outfalls with discharges to waterbodies<br>**2** Illicit discharges detected through dry weather monitoring |
| **H (2)/H (4) Wet Weather Screening and Characterization** | | | |
| 1. Coordinate with the NCTCOG Regional Wet Weather Characterization Program and perform sampling per RWWCP schedule. | Wet weather screening results for each watershed sampled | PY1 - PY5 | Two (2) watersheds screened and sampled for wet weather data |
| 2. Perform bi-annual wet weather screening within designated watersheds once per permit term in accordance with the local Wet Weather Sampling Program. | Wet weather screening results for each watershed sampled | PY1 - PY5 | Six (6) watersheds screened and sampled for wet weather data |
| **H (3) Industrial and High Risk Monitoring** | | | |
| 1. Identify and prioritize the facilities that have the potential to discharge pollutants into the MS4. | # of Facilities required to submit monitoring data | PY1 - PY5 | 191 |
| | # of data sets received and reviewed | PY1 - PY5 | 126 |
| 2. Evaluate SCMs, or inspection and monitoring programs, for effectiveness. | # of Facilities required to submit an Action Plan and/or more frequent monitoring to reduce pollutants discharged into the MS4 | PY1 - PY5 | 17 |

| Table H-1, (Continued)<br>Summary of Performance: MCM 8 - Monitoring, Evaluation and Reporting | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period** |
| **H (5) Floatables Monitoring** | | | |
| 3. Inspect litter booms for trapped materials, at least two (2) times per year. | # of Litter boom inspections performed | PY1 - PY5 | **144** Litter boom inspections conducted |
| 4. Remove, dispose, and recycle if possible, collected materials. | Volume of floatables collected and disposed in CY | PY1 - PY5 | **553** cubic yards of debris was removed |
| **H (6) Rapid Bio-Assessment Protocol Monitoring** | | | |
| 1. Perform Rapid Bioassessment Protocol monitoring in at least three (3) watersheds plus a reference site, per year. | RBP monitoring results | PY1 - PY5 | 22 Permit watersheds monitored<br>73 Water quality sites<br>26 Bioassessment sites<br>2 Bioassessment sample periods per year |
| **H (7) TMDL Implementation Plan Support** | | | |
| 1. Develop Interim Bacteria Reduction Plan (iBRP) that outlines measures the City will implement to reduce Bacteria concentrations within the City | Append iBRP to SWMP | Permit Year 1 | iBRP completed and Appended to SWMP |
| 2. Participate in development of a Total Maximum Daily Load (TMDL) Implementation Plan for bacteria. | Document participation | PY1 – PY5 | Staff from 6 departments attended 12 meetings |
| 3. Participate in development of a TMDL Implementation Plan for polychlorinated biphenyls (PCBs) in fish tissue. | Document participation | Permit Year 1 - Permit Year 5 | Staff from 3 Departments attended 3 meetings |
| 4. Provide ambient conditions sampling at 3 locations along the Upper Trinity River in accordance with protocols included in the TRA CLRP QAPP. | Provide ambient water quality results in SWMP Annual report | Permit Year 1 - Permit Year 5 | Data included in Appendix E |

| Table H-1, (Continued)<br>Summary of Performance: MCM 8 - Status of Monitoring, Evaluation and Reporting | | | |
|---|---|---|---|
| **Activities** | **Metrics to be Tracked Annually** | **Implementation Schedule** | **Implementation Status for Reporting Period** |
| **H (8) Effluent Limit Guideline Implementation** | | | |
| 1. Identify scope of the Quality Assurance Program for the Effluent Limitations Guidelines (ELG) monitoring requirements within City limits. | Number of construction sites greater than 10 acres | Permit Year (PY) 1 - PY5 | 52 |
| | Number of construction related complaints for projects greater than 10 acres per watershed | PY1 - PY5 | none |
| 2. Develop and implement City Quality Assurance Program for ELG monitoring program by:<br>a) Developing standard operating guidelines (SOG) for ELG monitoring by City staff;<br>b) Training City staff on ELG monitoring program; and<br>c) Assessing ELG monitoring data from sites greater than 10 acres. | Document SOG developed | Permit Year 1 | SOG is in Draft format |
| | # of Staff trained | PY2 – PY5 | NA |
| | # of Sites monitored | PY2 – PY5 | NA |
| 3. Evaluate the Quality Assurance Program for the ELG monitoring and recommend any changes, as needed. | Document the review was conducted | PY3 – PY5 | NA |

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# SECTION 2 – PROPOSED CHANGES TO STORMWATER MANAGEMENT PROGRAM

In accordance with Part IV.C.3.a of the TPDES Permit No.WQ0004396000, the Stormwater Management Plan (SWMP) was reviewed and the proposed revisions and rationale for revisions are outlined below. This section compiles the proposed changes as outlined under each MCM in Section 1 of this Report. A new SWMP that incorporates these revisions is provided under separate cover.

The SWMP, as provided contains several revisions to strengthen the program and streamline program administration. The revisions to the SWMP have been made in consideration of State and Federal water quality regulations and other guidance including, but not limited to: 40 CFR 122.26(d)(1)(iii)(B), the City's existing TPDES permit, the United States Environmental Protection Agency (U.S. EPA) MS4 Program Evaluation Guidance (January 2007), the National Research Council (NRC), Urban Stormwater Management Report (NRC, 2008) and the recent EPA MS4 Permit Improvement Guide (April 2010). The primary SWMP revisions and the related rationale are as follows:

- **MCM 1: MS4 Maintenance Activities** – no changes proposed at this time
- **MCM 2: Post Construction Stormwater Control Measures -** no changes proposed at this time; completion of PY1 activities anticipated;
- **MCM 3: Illicit Discharge Detection and Elimination -** The City has reviewed the BMPs within this MCM for effectiveness, and is confident that they are working as intended to prevent pollutants from entering the MS4 to the MEP. However, the regional iPlan and iBRP include several new measures to address bacteria discharges that are scheduled to begin during PY2; the SWMP should be updated to include:
  - Report on Capacity Management Operations and Maintenance (CMOM) Program
  - Evaluate SSOs from lift stations
  - Relocate sanitary sewer out of waterways as practicable
  - Report on liquid waste hauler program
  - Evaluate potential Code revisions related to portable sanitary sewer unit location and service schedule
  - Identify areas served by on-site sanitary sewers and/or aerobic treatment units
  - Develop Supplemental Environmental Project Program
  - Assess City Parks for pet and wildlife use
  - Evaluate need to waterfowl management plan
- **MCM 4: Pollution Prevention and Good Housekeeping -** no changes proposed at this time
- **MCM 5: Industrial and High Risk Runoff -** no changes proposed at this time
- **MCM 6: Construction Site Stormwater Runoff –** The City has reviewed the BMPs within this MCM for effectiveness; at this time, all BMPs are functioning as intended. However, an additional BMP will be added to require site plan reviews that incorporate considerations of water quality impacts, receipt and consideration of information submitted by the public and site inspection processes. The City's Planning and Zoning processes currently address these requirements, and the Annual Report reflects the efforts conducted to date. Thus, this is an administrative addition to the SWMP so that it parallels the Permit reporting requirements.
- **MCM 7: Public Education, Outreach, Involvement and Participation -** no changes proposed at this time
- **MCM 8: Monitoring, Evaluation and Reporting –** no changes proposed at this time

**Other Minor Changes**: Other minor changes that have been made to the SWMP include:

a) Short-term planning activities or studies that were completed during the last permit cycle (2006-2011) have been removed or updated with new goals;

b) The SCMs for training and outreach efforts in support of all of the permit elements have been compiled into Element 7, Public Education and Outreach/Public Involvement;

c) New general program delivery goals have been included to address identified pollutants of concern and measurable behavior changes, to provide program flexibility and responsiveness over the permit term.

## SECTION 3.0 - IDENTIFICATION OF WATER QUALITY IMPROVEMENT, DEGRADATION, AND PROGRESS TOWARDS MEASURED REDUCTION OF POLLUTANTS

Water quality improvements and degradation have been assessed according to measurable goals established in the SWMP created as part of the City's TPDES permit requirements.

The water quality sampling and analyses that was used to support the rapid bioassessment protocols (RBP) analyses, uses basic indicator chemicals such as pH and Chemical Oxygen Demand, to determine an overall assessment of watershed health. Because the RBP program involves regular data collection from the majority of the watersheds within the MS4 each year, an evaluation of the trends of these analytes can be used to assess water quality improvements, degradations and progress.

Table 3-1 provides a summary of water quality trends that compare average values across Dallas for the last Permit Year (PY5) with data collected during the Interim Period (Spring/Summer 2011) and PY1 (Spring/Summer 2012). The values shown reflect the average measured concentrations of each of these indicator analytes that were obtained through sampling 73 sites across the MS4.

**Table 3 - 1: Water Quality Trends**

| Water Quality Parameter | PY5 | Interim | PY1 | Assessment |
|---|---|---|---|---|
| Dissolved Oxygen (mg/L) | 6.3 | 7.3 | 6.6 | No significant change |
| Water Temperature (C) | 25.2 | 24.6 | 25.7 | No significant change |
| Conductivity (uS/cm) | 678 | 658 | 635 | **Slight Improvement** |
| Total Suspended Solids (mg/L) | 23.8 | 24.8 | 19.3 | **Slight Improvement** |
| Iron (mg/L) | 0.40 | 0.44 | 0.43 | No significant change |
| pH | 7.79 | 7.77 | 7.82 | No significant change |
| Phosphorous (mg/L) | 0.16 | 0.13 | 0.07 | **Significant Improvement** |
| Chemical Oxygen Demand (mg/L) | 12.61 | 20.12 | 18.09 | No significant change |
| Ammonia (mg/L) | 0.26 | 0.15 | 0.09 | **Significant Improvement** |
| *E. coli* (MPN) | 225 | 143 | 194 | **Slight Improvement*** |

* **Notes**: Slight degradation from Interim period to PY1; Slight improvement from both Interim and PY1 from PY5

These data illustrate no significant change for a majority of the analytes, within the normal variation that would be expected in a natural system. Of note, there were slight improvements found for conductivity, TSS and *E. coli* bacteria, and a significant improvement for ammonia and phosphorous. This may indicate an overall decrease in nutrient loading to the waterways, which is encouraging. The average bacteria measurements across the watershed, showed a

Significant Improvement between PY5 and the Interim period; however, while the PY1 values remain slightly improved over PY5, these values indicated a slight degradation from the interim period.

It should be noted that trend analyses was performed on available bacteria data to support development and implementation of the iBRP. These data generally illustrate improvement in measured bacteria concentrations in 72 percent of the watersheds evaluated. The TCRP data evaluated for the Trinity River also illustrates a measured positive improvement over time. Trend analyses for bacteria will be continued over this permit term to evaluate progress towards meeting applicable water quality criteria to support full beneficial use of the Trinity River and its tributaries.

## SECTION 4.0 PROGRESS TOWARDS IMPLEMENTING THE INTERIM BACTERIA REDUCTION PLAN (iBRP)

The City of Dallas (City) developed an Interim Bacteria Reduction Plan (iBRP) as an appendix to the Stormwater Management Plan, and has effectively integrated the management practice and control measures into the stormwater program. The Interim Bacteria Reduction Plan (iBRP) was developed to be compliant with requirements of Part III.B. 3 of the City's permit:

> *"3. Discharges to Water Quality Impaired Receiving Waters.*
>
> *For discharges from the MS4 that will reach one or more surface water bodies that are identified on the latest approved Clean Water Act §303(d) List as not meeting applicable state water quality standards due to bacteria, the permittee shall develop an interim bacteria reduction plan (IBRP). The IBRP must be included in the SWMP and must discuss the management practice and control measures that the permittee will implement to reduce, with the goal of eliminating, the discharge of bacteria that contribute to the impairment of the water body. The IBRP must specifically identify control measures and practices, including monitoring and screening activities that are used to address the discharge of bacteria*."

The iBRP was completed in September 2013, and included stakeholder department input, as well as input gained from participation in the regional NCTCOG process to develop the Bacteria iPlan. As a result, the iBRP is consistent with the regional iPlan, and includes many measures that the City is already implementing to improve water quality across the City.

The iBRP forms Appendix B to the City's SWMP, and has been submitted to the TCEQ under separate cover. Most of the management practices and control measures are also correlated with the comparable best management practices (BMPs) outlined in the draft regional iPlan. The iBRP is comprised of the following sections:

- **Section 1.0: Introduction:** provides the purpose and general format of the iBRP;
- **Section 2.0: Watershed Description**: provides a description of the geographic boundary of the MS4, the listed and classified waters, and watersheds comprised within the corporate boundaries of the City;
- **Section 3.0: Water Quality - Sources and Trends**: provides a summary of potential sources of bacteria, current monitoring and screening programs, and water quality trends across the City with respect to bacteria;
- **Section 4.0: Regulatory Background:** provides a detailed description of the Stormwater Management Plan, the designated bacteria Total Maximum Daily Loads and the draft Implementation Plan to address these TMDLs;
- **Section 5.0: Bacteria Reduction BMPs:** provides a summary of the bacteria management practices and control measures, related iPlan and SWMP activities, measurable goals, and implementation schedule;
- **Section 6.0: Implementation Schedule:** provides a comprehensive summary table of the various BMPs outlined in Section 5 with a schedule for implementation**;**

- **Section 7.0: Anticipated Load Reduction:** provides a general discussion of anticipated load reductions over time given full implementation of the measures outlined herein**;**
- **Section 8.0: References**

Each set of control measures and practices in the iBRP has been outlined to address the eight (8) minimum control measures of the SWMP, and includes measureable goals to reduce the discharge of bacteria from the MS4 to Trinity River to the maximum extent practicable. These measures have been integrated into the SWMP, and are shaded in green in both the SWMP, and the Annual Report to illustrate how they are integrated into to the City's SWMP. Performance on implementing these measures is in compliance with the targeted goals as outlined in the iBRP and the SWMP.

# SECTION 5 – ANNUAL EXPENDITURES FOR REPORTING PERIOD

As required by Part IV.C.4.c of the TPDES Permit No.WQ0004396000, this Annual Report includes expenditures for the reporting period, a breakdown of the major elements of the SWMP, and the estimated budget allocation for next year. The direct annual expenditures are presented by SWMP element and include indirect costs related to records management, training, equipment, office supplies, repairs, laboratory, utilities, consultants, contracted services and debt services.

During the reporting period, the City had an estimated **$122,572,500** in expenditures for activities related to implementing the major elements of the SWMP. Table 5-1 provides a breakdown of the annual expenditures by Element (as incurred costs):

**Table 5-1 - Estimated SWMP Implementation Costs**
**Reporting Period (February 22, 2011 – September 30, 2012)**

| Element | Element Name | Estimated Costs |
|---|---|---|
| 1 | **MS4 Maintenance**<br>- Structural Controls<br>- Floatable Removal<br>- Roadways | $14,359,100 |
| 2 | **Post Construction Stormwater Control Measures**<br>- Areas of Development and Redevelopment<br>- Flood Control Projects(includes Debt Service for dredging and Certificate of Obligation) | $47,800 |
| 3 | **Illicit Discharges and Improper Disposal**<br>- IDDE<br>- DWU - SSO Initiative<br>- Sanitation - Household Hazardous Waste<br>- SWM | <br><br>$75,987,600<br>$621,100<br>$5,323,900 |
| 4 | **Pollution Prevention/Good Housekeeping for Municipal Operations**<br>- EMS/ISO 140001<br>- Pesticides, Herbicides and Fertilizer Application<br>- Spill Response | $1,621,600 |
| 5 | **Industrial and High Risk Runoff** | $826,900 |
| 6 | **Construction Site Runoff** | $826,900 |
| 7 | **Public Education and Outreach/Public Involvement and Participation** | $835,400 |
| 8 | **Monitoring, Evaluation and Reporting** | $826,900 |
| N/A | **Program Administration** (includes billing, legal, insurance, etc.) | $4,968,700 |
| | **TOTAL EXPENDITURES** | **$122,572,500** |

The values presented in the Table 5-1, Estimated Implementation Costs represent approximate expenses and reflect an increase in the Program Administration due to the advanced payoff of the billing debt service. The City's fiscal year is October 1st through September 30th. This table includes an estimated allocation of program expenditures incurred during the period from February 22, 2011 and September 30, 2011. A lag between when

expenditures occur and when they are reflected in financial systems may be present as a result of internal financial reporting structures. Given the overlap of certain components of the program that entail shared costs, (i.e., public education program development, project administration, etc.), the allocation of some components of the costs is approximate. The values presented do not include all costs that could be categorized as maintenance, i.e. repairs to wastewater collection system, or routine operations.

## SECTION 6 – PROPOSED PROGRAM BUDGET FOR FOLLOWING PERMIT YEAR

As required by Part IV.C.4.d of the TPDES Permit No.WQ0004396000, this Annual Report includes the estimated budget allocation for the next permit year. The direct annual expenditures are presented by SWMP element and include indirect costs related to records management, training, equipment, office supplies, repairs, laboratory, utilities, consultants, contracted services and debt services.

During the next reporting period, the City estimates **$124,871,200** in expenditures for activities related to the major elements of the revised SWMP. The direct annual expenditures are presented by revised SWMP element, but also include indirect costs related to records management, training, equipment, office supplies, repairs, laboratory, utilities consultants, contracted services and debt service. Table 6-1 provides a breakdown of the estimated expenditures by Element (projected costs):

**Table 6-1 – Proposed SWMP Implementation Budget for New Permit Year (October 1, 2012 – September 30, 2013)**

| Element | Revised Element Name | Estimated Budget |
|---|---|---|
| 1 | **MS4 Maintenance**<br>- Structural Controls<br>- Floatable Removal<br>- Roadways | $19,227,900 |
| 2 | **Post Construction Stormwater Control Measures**<br>- Areas of Development and Redevelopment<br>- Flood Control Projects(includes Debt Service for dredging and Certificate of Obligation) | $15,170,500 |
| 3 | **Illicit Discharges and Improper Disposal**<br>- IDDE<br>- DWU - SSO Initiative<br>- Sanitation - Household Hazardous Waste<br>- SWM | $77,507,400<br>$633,500<br>$5,451,800 |
| 4 | **Pollution Prevention/Good Housekeeping for Municipal Operations**<br>- EMS/ISO 140001<br>- Pesticides, Herbicides and Fertilizer Application<br>- Spill Response | $1,654,000 |
| 5 | **Industrial and High Risk Runoff** | $843,400 |
| 6 | **Construction Site Runoff** | $843,400 |
| 7 | **Public Education and Outreach/Public Involvement and Participation** | $852,100 |
| 8 | **Monitoring, Evaluation and Reporting** | $843,400 |
| N/A | **Program Administration** (includes billing, legal, insurance, etc.) | $1,843,800 |
| | **TOTAL** | **$124,871,200** |

The values presented in Table 6-1 - Estimated Implementation Costs for City of Dallas (New PY1) reflect projected costs and an increase in the debt service for flood protection and levee remediation. A lag between when expenditures occur and when they are reflected in financial systems may be present as a result of internal financial reporting structures. Given the overlap of certain components of the program that entail shared costs, (i.e., public education program development, project administration, etc.), the allocation of some components of the costs is approximate. The values presented do not include all costs that could be categorized as maintenance, i.e. repairs to wastewater collection system, or routine operations.

## SECTION 7 - REVISIONS TO ASSESSMENT OF CONTROLS OR BUDGET FROM PREVIOUS REPORTING PERIOD

As required by Part IV.C.4.e of the TPDES Permit No.WQ0004396000, "*revisions, if necessary, to the assessment of controls, and the fiscal analyses reported in the permit application are to be provided in the Annual Report*."

There are no necessary revisions to the assessments of controls or fiscal analysis reported in the PY5 Annual Report.

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## SECTION 8 – SUMMARY OF PERMIT NOTIFICATIONS RECIEVED

As required by Part IV.C.4.f of the TPDES Permit No.WQ0004396000, this Annual Report includes a summary of notices of intent and other notifications received.

During the reporting period, the City received **219** notices, letters, and/or building permits that were provided in accordance with the TCEQ TPDES TXR150000 General Permit for Construction Activities.

Through this process, the City identified **1,080** Non-TPDES permitted facilities through screening that were evaluated for their need to obtain coverage under the Multi-Sector General Permit. As a result of the follow-on inspections of these facilities, **98** new TPDES-permitted industrial facilities were permitted during the reporting period.

During the reporting period, the City received **435** "No Exposure" certificates, and monitoring data from **126** facilities. The majority of the reviewed data was compliant with permit requirements.

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## SECTION 9 – A SUMMARY OF INDUSTRIAL AND CONSTRUCTION SITE INSPECTIONS

As required by Part IV.C.4.g of the TPDES Permit No.WQ0004396000, this Annual Report includes a summary of industrial and construction site inspections conducted during the reporting period.

**Construction Inspections:** The City conducted a total of **6,428** inspections at **355** large construction sites. The City conducted **2,668** inspections on **340 s**mall construction sites between 1 and 5 acres. The City conducted **39 i**nspections of sites with ground disturbances of greater than one acre in size in response to complaints.

**Industrial Inspections**: The City performed a total of **2,553** industrial facility inspections from February 22, 2011 to September 30, 2012. The City also conducted a site review and inspection of the eight (8) permitted City industrial facilities (1 landfill, 3 transfer stations, 1 salvage yard, 2 airport facilities and 1 Dallas Police Department facility).

The City inspected the all industrial sites classified as SARA 313 facilities once during the interim period (66 inspections), and again during the PY1 monitoring period (73 inspections). During the interim period, **81** facilities classified as high risk runoff discharge facilities were inspected. During the full PY1, a total of **195** high risk facilities were inspected. Of these sites, **70%** of the facilities inspected were found to be non-compliant and were required to update their Stormwater Pollution Prevention Plan, and make other onsite improvements to bring the site into compliance. During these inspections, **16** facilities were found to be no longer in operation at the facility location on record.

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## SECTION 10 – REPRESENTATIVE MONITORING DATA AND DATA SUMMARY

As required by Part IV.C.4.h of the TPDES Permit No.WQ0004396000, this Annual Report includes representative monitoring data and a summary of the data collected over the reporting period. Data accumulated during the reporting period is summarized in Section 1 or the Appendix E of this Report. As described in Section 1 - Element 8, Monitoring, Evaluation and Reporting, water quality samples are obtained as a part of several ongoing City SWM programs, including the City's Dry Weather Screening Program, Wet Weather Screening Program and the Rapid Bioassessment Protocol (RBP) Program. Analytes sampled for, vary by program, and include, but are not limited to:

- Total suspended solids (TSS)
- Turbidity
- pH
- Temperature
- Arsenic
- Iron
- Copper
- Lead
- Zinc
- Cadmium
- Sulfate
- Nitrite/ Nitrate
- Ammonia
- Dissolved Oxygen
- Oil & Grease
- Total Petroleum Hydrocarbons (TPH – as needed)
- Total Dissolved Solids (TDS)
- Total Chlorine
- Total Phosphorous
- Chemical Oxygen Demand (COD)
- Biochemical Oxygen Demand (BOD)
- Surfactants
- *E. coli* bacteria
- Total Coliform bacteria
- Diazanon
- Orthophosphate
- Temperature and hardness
- Specific conductance
- Temperature
- Hardness

The samples collected for enforcement actions are sent to a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory for analyses.

During the reporting period, the City collected **691** samples as a result of all activities (including samples directly associated with the permit programs, samples for special surface water quality projects and samples for customer complaints and fish kills). These data are included in Appendix E.

**Dry Weather Screening Program**

During the reporting period, the City monitored **4,515** discharge locations in 22 subwatersheds through the dry waeather screening program. A total of **141** new outfalls were identified and **317** outfalls with discharge were observed during dry weather conditions. With the exception of two identified illicit discharges, the observed flows were generally natural flows, i.e. groundwater infiltration or runoff.

A total of **229** illicit discharges were detected through a combination of the dry weather inspection program and responses to citizen service requests. The identified illicit discharges included concrete slurry, hydrocarbons, paint, yard wastes, animal wastes, sediment discharges and private sewage leaks.

**Wet Weather Screening**

During the reporting period, the City obtained wet weather sampling in eight (8) watersheds. Each of the local wet weather sites were screened twice during wet weather conditions. Two of the eight watersheds were sampledquarterly as a part of the RWWCP; these data were submitted to the TCEQ by the NCTCOG on February 26, 2011. Data from these efforts indicate the primary pollutant of concern may be bacteria.

**Rapid Bioassessment Protocol Program**

The City performed RBP sampling to monitor and assess overall biological health in streams and watersheds within the City's jurisdiction. The RBP sampling program incorporates habitat assessments, water quality sampling, and biological sampling. The program collected samples from 73 stream locations within 22 12-digit HUC watersheds including samples from four (4) reference sites. There were two sampling events to coincide with index periods established by TCEQ for biological sampling:

- **Spring Period** (Mid-March to June 30$^{th}$): Targets spring's optimal conditions for biological community growth.
- **Summer Period (**July 1st to September 30$^{th}$): Reflects impacts from typical summer low flows and high water temperatures.

A composite score is determined through evaluation of numbers and diversity of macroinvertebrates, water quality parameters and other metrics. While a few watersheds provided optimal habitat, the majority of sites sampled were classed as "sub-optimal" or providing opportunities for improvement. This would be somewhat expected in an urban environment.