

CITY OF ARLINGTON, TEXAS



Permit Term:  
2012-2017

## Stormwater Management Program

**TPDES Stormwater Permit: WQ0004635000**

Effective: September 2006

Renewed: 2011

Prepared by the City of Arlington, Stormwater Division, to meet the requirements of the TPDES General Permit for Stormwater Discharges from Large MS4s.

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## List of Abbreviations and Acronyms

BMP	Best Management Practice
CFR	Code of Federal Regulations
CITO	Cache-In-Trash-Out
COA	City of Arlington
COA FD	City of Arlington Fire Department
CRP	Clean Rivers Program
CWA	Clean Water Act
DCM	Design Criteria Manual
DOT	Department of Transportation
ECC	Environmental Collection Center
EOP	Emergency Operations Plan
EPCRA	Emergency Planning and Community Right-to-Know Act
ERU	Equivalent Residential Unit
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
GIS	Geographic Information Systems
HHW	Household Hazardous Waste
HMRT	Hazardous Materials Response Team
IDDE	Illicit Discharge Detection and Elimination
IPM	Integrated Pest Management
iSWM	Integrated Stormwater Management
KAB	Keep Arlington Beautiful
MCM	Minimum Control Measure
MCU	Mobile Collection Unit
MEP	Maximum Extent Practicable
MFP	Municipal Facilities Program
MLU	Mobile Litter Unit
MOMP	Municipal Operations and Maintenance Program
MS4	Municipal Separate Storm Sewer System
MSGP	Multi-Sector General Permit
NCTCOG	North Central Texas Council of Governments
NEC	No Exposure Certification
NOI	Notice of Intent
NOT	Notice of Termination
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
OSSF	On-Site Sewage Facilities
PCB	Polychlorinated Biphenyl
PHF	Pesticides, Herbicides, and Fertilizers
PP/GH	Pollution Prevention and Good Housekeeping
PRP	Principle Responsible Party
PWT	Public Works and Transportation Department
RCRA	Resource Conservation and Recovery Act
RSLC	Republic Services Litter Crew
RWWCP	Regional Wet Weather Characterization Program
SARA	Superfund Amendments and Reauthorization Act
SIC	Standard Industrial Classification
SMD	Street Maintenance Division
SPCB	Structural Pest Control Board
SWFO	Stormwater Field Operations
SWMP	Stormwater Management Plan / Program

SWO	Stop Work Order
SWPCO	Stormwater Pollution Control Ordinance
SWPPP	Stormwater Pollution Prevention Plan
TAEX	Texas Agricultural Extension Service
TCEQ	Texas Commission on Environmental Quality
TDA	Texas Department of Agriculture
TDH	Texas Department of Health
TEEX	Texas A & M Engineering Extension Service
TPDES	Texas Pollutant Discharge Elimination System
TRA	Trinity River Authority
TSS	Total Suspended Solids
TXDOT	Texas Department of Transportation
UDC	Unified Development Code
US EPA	United States Environmental Protection Agency
USO	Unified Stormwater Ordinance
UTA	University of Texas – Arlington
WUD	Water Utilities Department

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# City of Arlington, Texas

## STORMWATER MANAGEMENT PLAN

### INTRODUCTION

#### **Regulatory Requirement**

The Clean Water Act (CWA) is a law enacted by Congress and signed by the President that establishes environmental programs to protect the nation's waters. The CWA also directs the U.S. Environmental Protection Agency (EPA) to issue rules on how to implement this law. The National Pollutant Discharge Elimination System (NPDES) program was authorized by the CWA and controls water pollution by regulating point sources that discharge pollutants into the waters of the United States. Under the NPDES program, a municipal stormwater program was developed in two phases. Phase I of the EPA municipal stormwater program, promulgated in 1990, requires operators of medium and large MS4s (serving populations of 100,000 and greater) to implement a stormwater management program to control polluted discharges. The Phase II rule extends coverage of the NPDES stormwater program to certain small MS4s (those not covered under the Phase I rule). The City of Arlington is considered a Phase 1 MS4.

On September 14, 1998, the Texas Commission on Environmental Quality (TCEQ) received authority to administer the NPDES permit program in Texas for those discharges under the regulatory authority of the agency. This program has been named the Texas Pollutant Discharge Elimination System Program (TPDES).

#### **Arlington Stormwater Permit History**

National Pollutant Discharge Elimination System (NPDES) Permit #TXS000301 was issued to the City of Arlington (COA), and its co-permittees, the Texas Department of Transportation (TXDOT) and the University of Texas – Arlington (UTA) on October 1, 1998. Since its issuance, the permitting authority has been delegated to the TCEQ. The City's TPDES permit #WQ0004635000 was first issued on May 26, 2006 and renewed on April 26, 2012.

#### **Permit Area**

The City of Arlington is located in Tarrant County approximately 12 miles (19 km) east of downtown Fort Worth, TX and 20 miles (32 km) west of downtown Dallas, TX. The current city limit covers approximately 99.7 square miles (258.2 km<sup>2</sup>) – 95.8 square miles (248 km<sup>2</sup>) of land, and 3.2 square miles (8.3 km<sup>2</sup>) of water.

The permit area is comprised of ten (10) watersheds: Trinity Tributaries; Lower Village; Upper Village; Johnson, Cottonwood, Rush; Fish; Lynn; Walnut, and Bowman Branch.

Lake Arlington is also located within the Arlington City limits. This reservoir is situated on Village Creek, and is a tributary of the West Fork Trinity River. It has a surface area of 1,939 acres and has a maximum depth of 51 feet.

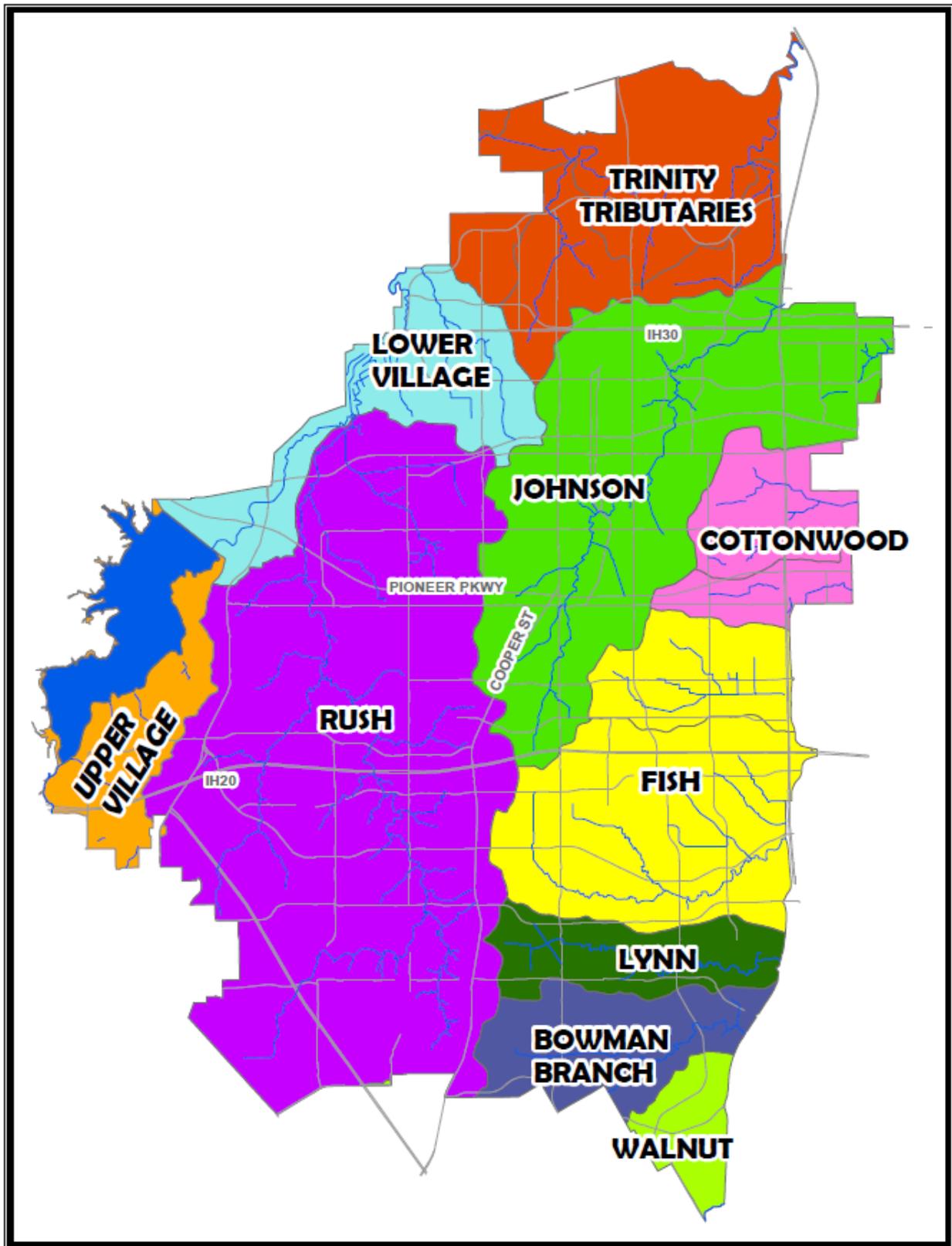


FIGURE 1: MAJOR WATERSHEDS, ARLINGTON, TX

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## Stormwater Management Plan (SWMP)

As part of the TPDES MS4 permit requirements, the City of Arlington has developed this SWMP to guide and facilitate its stormwater management program and to comply with TPDES requirements for stormwater discharges. The goals of the SWMP are protection and improvement of stormwater and surface water quality through the implementation of a variety of activities (best management practices) including, but not limited to, inspection, maintenance, enforcement, planning, design, monitoring, and education. The SWMP is intended to aid in the City's efforts to reduce stormwater pollutants from the City's storm sewer system to the maximum extent practicable as required by the TPDES General Permit.

The SWMP describes specific actions that will be taken over a five-year period to reduce pollutants and protect the City's Stormwater quality. The specific activities to be implemented are referred to as best management practices (BMPs). Various BMPs have been developed for each of the eight minimum control measures (MCMs) required by the City's MS4 permit. The SWMP also sets measurable goals and provides a schedule for the implementation of the BMPs. Implementation of the selected BMPs is expected to result in reductions of pollutants discharged into the COA's creeks, streams, ponds, and lakes.

The City of Arlington's Public Works and Transportation Department, Stormwater Management Division is responsible for the overall development of the SWMP, but several of the City's departments have some degree of responsibility in the implementation of the plan.

Co-permittees associated with the City of Arlington's MS4 permit (TXDOT and UTA) are responsible for the development and implementation of their own respective SWMPs for those portions of the MS4 within their jurisdiction.

## Legal Authority

The City of Arlington is operated as a council-manager form of government. Elected officials include the mayor and eight city council members. The city regulates activities within its boundaries through ordinances designed to protect the health, safety, and welfare of its citizens. Several ordinances support the various aspects of the SWMP including but not limited to the Stormwater Pollution Control Ordinance, Flood Damage Prevention Ordinance, Nuisance Ordinance, Emergency Management Ordinance, Backflow Prevention Ordinance, Animals Ordinance, Construction Ordinance, and the Industrial Waste and Water Pollution Control Ordinance.

## SWMP Updates, Revisions, and Rationales for Revisions

This SWMP will facilitate the City's efforts in reducing stormwater pollutants to the MS4, thereby protecting stormwater quality to the maximum extent practicable (MEP). As the programs continue to grow, further modifications will be needed. Any modifications to the SWMP will be highlighted in future submissions to the TCEQ. This SWMP replaces and supersedes any and all previous SWMPs developed for the City's MS4 permit.

The following modifications have been made to this SWMP: (June 2016)

- Updated list of abbreviations and Acronyms to include reference Municipal Facilities Program (MFP) and Municipal Operations and Maintenance Program (MOMP)
- Removal of all references to the Stormwater Executive Manager – replaced with Assistant Director of Public Works and Transportation – Stormwater Management Division

- MCM 2: Post-Construction Stormwater Control Measures
  - Regulatory Update Section
    - **Revision:** Changed anticipated adoption date
    - **Rationale for Revision:** Progress on these documents has been delayed by staffing changes and significant rain events that have created a higher than typical demand for drainage advice and emergency projects related to channels and bridges that were damaged or threatened by storms. Anticipated adoption of the Unified Stormwater Ordinance is by December 2016 with activities beginning in the next permit term.
- MCM 4: Pollution Prevention and Good Housekeeping (PP/GH)
  - Identification and Implementation of Good Housekeeping BMPs Section
    - **Revision:** Included more information about the City's developing PP/GH Program
    - **Rationale for Revision:** To provide a more detailed outline of how the City is developing its in-house pollution prevention programs.
- MCM 7: Public Education, Outreach, Involvement, and Participation
  - Community Program, Media Program, and In-house Program Sections
    - **Revision:** Language Changes
    - **Rationale:** For increased Clarity
- MCM 8: Public Education, Outreach, Involvement, and Participation
  - Dry Weather Screening Program Section
    - **Revision:** Removed reference to screening occurring within 72 hours of a significant rain event to 48 hours.
    - **Rationale:** Changed to align with program standard operating procedure
  - Inner-City Creek Sampling Program Section (Clean Rivers Program)
    - **Revision:** Included information regarding an increase in E-coli sampling from quarterly to monthly
    - **Rationale:** Seven CRP locations were chosen to monitor indicator bacteria. These locations have been identified by the TCEQ as impaired waterbodies not suitable for contact recreation due to the high presence of indicator bacteria, and are regulated under TMDL. All current CRP sites are monitored for indicator bacteria once a quarter. In order to fully represent stream flow conditions and presence of bacteria, it is imperative that the City monitor these locations on a monthly basis and develop a baseline of data to accurately determine the health of Arlington's streams.
- Appendix A: Measurable Goals
  - Updated BMPs that correlate to the above listed changes to the individual MCMs.

## SWMP Availability

The SWMP is available for review at the City of Arlington, Public Works and Transportation Department, located at City Hall (101 W. Abram Street, Arlington, Texas, 76010). The SWMP is also available on the City website at [www.arlington-tx.gov/stormwater](http://www.arlington-tx.gov/stormwater). Questions regarding the SWMP may be directed to the Assistant Director of Public Works – Stormwater Management Division, Samantha W. “Mandy” Clark, P.E. at [Mandy.Clark@arlingtontx.gov](mailto:Mandy.Clark@arlingtontx.gov).

## STORMWATER MANAGEMENT PROGRAM COMPONENTS

### I. MS4 Maintenance Activities

The storm drainage system requires regular maintenance and inspection to mitigate and/or reduce negative impacts to water quality and to ensure that control structures intended to prevent pollution are functioning. Maintenance activities include implementing a comprehensive program to address **structural controls, floatables, and roadways** to decrease potential impacts to the MS4.

#### Structural Controls

*“To the maximum extent practicable (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.” (TPDES Permit, Part III, Section B.2.a.i.)*

The City of Arlington’s Stormwater Management Maintenance program includes provisions for the maintenance of public owned or operated structural stormwater controls including, but not limited to: detention ponds, inlets, conduits, and channels. The purpose of this program is to ensure proper operation of these structural controls for flood prevention and stormwater quality management.

The Stormwater Field Operations (SWFO) Division’s responsibilities fall into two major categories: **Stormwater Infrastructure Inspection and Stormwater Infrastructure Maintenance**. The SWFO is responsible for in-house street sweeping, street sweeping contract administration, stream stabilization, channel mowing, emergency operations, debris removal, and responding to citizen concerns. SWFO is responsible for maintaining all aspects of the public stormwater conveyance system unless otherwise specified.

#### STORMWATER INFRASTRUCTURE INSPECTIONS

Drainage and structure maintenance consists of the following (areas):

**Curb Inlets:** Curb inlets are inspected annually for structural integrity and to ensure there are no obstructions blocking the flow of water.

**Box Culverts:** Box Culverts are inspected on a yearly basis to check for erosion and obstructions.

**Storm Sewer Pipe:** Storm sewer pipe inspections, including video inspections, are carried out on all newly constructed storm sewer pipes. Inspections of existing storm sewer pipe are carried out on an as-needed basis.

**Bridges:** TXDOT performs bridge inspections biannually to check for maintenance issues. Upon receipt of the report, the SWFO Division will take pictures of each location identified as “deficient” and document the concern.

**Barrow Ditches:** Barrow ditches are generally on county type roadways and are used to carry water due to a lack of underground drainage. Inspections are performed on an as needed basis.

**Concrete Channel:** Per federal and/or state regulation, concrete channels must be inspected once a year.

**Concrete Flumes:** Concrete flumes are inspected and cleaned as needed due to reported issues.

### STORMWATER INFRASTRUCTURE MAINTENANCE

**Curb Inlets:** Curb inlets are cleaned on an as needed basis as determined by requests or inspections.

**Box Culverts:** Box culverts may be cleaned several times a year based on the weather conditions.

**Culvert Pipes:** Culvert pipes are utilized to carry water from one side of a street or driveway to the other side. By City ordinance, driveway approaches, including culvert pipes, are the responsibility of the property owner. The City can maintain the mouth of the pipe to remove debris but cleaning inside is the responsibility of the property owner.

**Storm Sewer Pipe:** Maintenance issues with pipes typically occur when soil movement causes the pipe to shift, which causes joint seals to fail. Then soil begins infiltrating into the pipe, causing street cave-ins and holes on unpaved portions. Repairs can be performed with a variety of products from the inside of the pipe. When repairing from the inside is not possible, excavation must occur to seal the outer perimeter of the pipe.

**Bridges:** The Stormwater Operations Supervisor is responsible for developing a plan of action to correct the bridge deficiencies. Priority is given to areas that have undermining to the extent that damage to the structure is possible.

**Barrow Ditches:** Barrow ditches are generally on county type roadways and are used to carry water due to a lack of underground drainage. Repairs are generally performed on a complaint basis and can be performed by the Stormwater Utility Crew or Field Operations crews.

**Concrete Channel Maintenance:** Channels that require cleaning are placed on a schedule and cleaned on a “worst first” basis, based on the following criteria:

- The percentage of the channel that has silt or debris.
- The degree to which debris blocks water flow.

Algae build up does not constitute a channel that needs cleaning. Standing water as a result of irregularities in the concrete elevation does not constitute a need for repairs.

**Concrete Channel Rebuilds:** Channel structure repair that would require equipment not owned by the City, or would require engineered drawings are submitted to Stormwater Engineering for rebuild by a contractor. Channels will be maintained to remove silt and debris until the rebuild occurs.

**Concrete Flumes:** Concrete flumes are small shallow channels which are used to carry water from the street to a concrete channel or a creek. Concrete flumes are cleaned as needed due to reported issues. Severe weather or special circumstances may dictate additional cleaning.

### ADDITIONAL RESPONSIBILITIES

**Illegal Dumping:** “Illegal Dumping” includes but is not limited to: trees, tree limbs, leaves, shrubs, plants, weeds, grasses, any other type of yard waste or debris, dirt, sand, rocks, bricks, landscaping materials, fencing materials, litter, household garbage, animal waste, tires, batteries, automotive components, paint or chemicals of any sort. Whenever undeniable, verifiable illegal dumping is discovered, pictures are taken, and Stormwater Operations will place a white, yellow, or blue door hanger on the offender’s door as a warning. A notification of the offending address is emailed to the Environmental Compliance Division.

**Consulting With Engineering:** Projects that require design to correct a drainage issue are conducted in coordination with the Stormwater Engineer. The Stormwater Operations Supervisor is the point person to contact Stormwater Engineering when required.

**Hazardous Materials Dumpster:** The Hazardous Materials dumpster is used as a collection point for hazardous materials spills resulting from automobile accidents or other incidents requiring clean-up of liquids such as motor oil, antifreeze, transmission fluid, hydraulic oil, gasoline, or diesel fuel. The City’s contracted wrecker service notifies Stormwater Operations when they are ready to deliver a new load to the dumpster. The bagged and tagged material is loaded into the dumpster, and type and quantity are logged on a paper form.

**Natural Creeks:** Natural Creeks are currently not maintained by City staff. Stormwater Operations shall not work in natural creeks unless a tree has fallen or other large debris blocks the flow of the creek.

**Concrete Channels and Flumes:** While concrete channels and flumes are maintained by City staff, adjacent walls, fences, and vegetation as well as property drainage to the concrete structures are the responsibility of the property owner.

**Severe Weather:** As part of the Severe Weather Standard Operating Procedures, additional inspections or unscheduled maintenance may be performed on an as needed basis.

## Floatables

*“The permittees shall implement a program to reduce the discharge of floatables (for example litter and other human generated solid refuse) into the MS4. The permittees shall include source controls at a minimum, and structural controls and other appropriate controls where necessary.” (TPDES Permit, Part III, Section B.2.a.ii.)*

*“The permittee shall ensure the implementation of a program to reduce the discharge of floatables (e.g. litter and other human generated solid refuse) into the MS4, which must include source controls and, where necessary, structural controls and other appropriate controls. The amount of material collected shall be estimated by weight, volume, or by other practical means. Results shall be included in the Annual Report required in this permit.” (TPDES permit, Part IV, Section B.)*

Floatables are primarily human generated litter and debris that is carried into waterbodies (streams, creeks, lakes, rivers, etc.) and storm drainage structures. Floatables are typically discharged into surrounding waters during certain rain events. Floatables are the most visible indicator of man-made surface water pollution.

The City maintains an active floatables program. The floatables program improves surface water quality, drainage system conveyance, and channel aesthetics. The floatables program consists of the following primary program areas: City of Arlington Cart Recycling Program; Mobile Litter Unit; Litter Crew (Contract); Litter Abatement (Local Partnerships / Education); and Parks & Recreation Department Pond Cleaning. These programs help reduce significant amounts of trash from entering the City’s water bodies and/or other waters of the United States.

### **CITY OF ARLINGTON AUTOMATED RECYCLING CART PROGRAM**

Implemented in June 2013, the automated cart recycling program replaced the previous open bin recycling program. The new recycling carts are equipped with a lid to reduce the incidence of wind-blown litter that could potentially pollute streets and water drainage systems. In FY15 with continued implementation of the cart system, approximately 47,900,000 pounds of recyclable material was collected - an increase of 16.2% since program inception. Additionally, the Solid Waste Division has seen a decrease in calls related to recycling bin litter issues.

### **MOBILE LITTER UNIT (PARKS & RECREATION DEPARTMENT)**

The mobile litter unit (MLU) is a fully-equipped litter abatement and beautification trailer that is utilized to help fight litter and beautify the city. With the assistance of Water Utilities, the Parks and Recreation Department acquired this trailer stocked with community clean-up supplies.

The MLU is an available resource for organizations, businesses, and neighborhoods to reserve, free of charge, to aid in their efforts of keeping their neighborhoods beautiful. The MLU is utilized throughout the year for citizen and city sponsored clean-up efforts. Currently, the Mobile Litter Unit Crew (MLUC) is available to all of the community; resources are being provided from the Parks and Recreation Department’s Forestry and Beautification business unit.

Typical usage of the MLU is about 10-12 times per year.

### **LITTER CREW (OUTSIDE CONTRACT)**

The City of Arlington, through its solid waste contract with Republic Services, utilizes the Republic Services Litter Crew (RSLC). Arlington residents have the ability to contact Republic Services and request the Litter Crew respond to heavily littered areas. Republic Service Supervisors also survey and document areas that require attention, sending out the RSLC to abate as often as necessary. RSLC Supervisors track the total number of days per month that the RSLC responds for abatement and the total weight of litter collected (in pounds).

### **LITTER ABATEMENT (LOCAL & REGIONAL PARTNERSHIPS THROUGH VOLUNTEERING AND EDUCATION)**

The City of Arlington implements litter abatement through two partnerships: Keep Arlington Beautiful (KAB) and Tarrant Regional Water District (TRWD).

#### **Keep Arlington Beautiful (KAB)**

KAB, an affiliate chapter of Keep America Beautiful, has implemented a “Litter Survey Index” (9/23/14) throughout the City’s Council Districts. The KAB members and volunteers survey ten (10) 1-mile length roadways for litter. The survey results were compiled and averaged for an overall rating of litter for the City of Arlington. Results suggest that some council districts have higher rating of litter and debris than others. Results are used to determine clean-up efforts for future volunteer events. Assessments are conducted periodically to evaluate the effectiveness of follow-up abatement activities.

KAB also sponsors the Cache-In-Trash-Out (CITO) litter clean-up events implanted by the Parks and Recreation Department. CITO events are conducted within the city limits and are predominately located within City Parks. A typical CITO event is focused on litter clean-up, removal of invasive species, re-vegetation efforts, and trail building. Many CITO events utilize the Parks and Recreation MLU.

#### **Parks and Recreation, Public Works, and Keep Arlington Beautiful**

The City of Arlington Parks and Recreation Department together with Public Works and Transportation, and Keep Arlington Beautiful launched an adopt-a-spot initiative aimed at keeping public spaces clean and as a result improving water quality in the City. The Adopt-a-Spot program allows individuals, community groups and associations, and others to maintain a public space for one (1) calendar year. Adopting individuals and organizations are asked to remove litter and maintain their respective spots monthly. A sign is erected in appreciation of the volunteers’ efforts.

### **PARKS AND RECREATION DEPARTMENT PARKS & POND CLEANING**

The Parks and Recreation Department maintains approximately 21 ponds in its city parks. Ponds are checked daily. Litter is removed from ponds approximately once per month. Trash is routinely removed from Parks grounds to reduce the volume of floatables reaching Arlington streams.

**Roadways**

*“The permittees shall operate and maintain public streets, roads, and highways to minimize the discharge of pollutants, including pollutants related to deicing or sanding activities.” (TPDES Permit, Part III, Section B.2.a.iii.)*

The City of Arlington operates and maintains public streets and roads in a manner to minimize the discharge of pollutants to the MS4, including those pollutants related to deicing and/or sanding activities. The program includes **street sweeping activities, spill response** (hazardous and non-hazardous materials to the roads and streets), and **deicing and/or sanding activities**.

**STREET SWEEPING**

**In-house Sweeping**

In-house street sweeping is the responsibility of The City of Arlington, Public Works and Transportation Department, Stormwater Division. One SWFO staff member is designated as the street sweeper operator, and he or she sweeps specific sections of thoroughfares 40 hours per week. After finishing the complete list shown below, the operator starts over. Sweeping is also available upon request for citywide events such as the annual Fourth of July Parade. All sweeping is mechanical, and the City does not flush or vacuum streets. Sweeping is divided as follows:

- a. **Citizen Concerns** – All sweeping requests are “dispatched” through Cartegraph, the Department’s asset management software, by the creation of a Request Form and Work Order.
- b. **Major Thoroughfare Sweeping** – The map of Arlington has been divided in to three sections – North, Central, and South. The in-house sweeper is expected to complete each section twice per year, sweeping the thoroughfares shown on the list below. Sweeping commences daily unless equipment fails or the staff member is needed to assist with immediate needs in SWFO.

**EAST & WEST**

Street	From	To
<b>NE Green Oaks Blvd</b>	Hwy 360	Cooper St
<b>NW Green Oaks Blvd</b>	Cooper St	Meadowbrook Blvd
<b>W Green Oaks Blvd</b>	Dottie Lynn Pkwy	Interstate - 20
<b>SW Green Oaks Blvd</b>	Interstate - 20	Matlock Rd
<b>SE Green Oaks Blvd</b>	Matlock Rd	Hwy 360
<b>Brown Blvd</b>	Collins St	Hwy 360
<b>Avenue J</b>	Ballpark Way	Hwy 360
<b>Lamar Blvd</b>	NW Green Oaks Blvd	Hwy 360
<b>Randol Mill Rd</b>	NW Green Oaks Blvd	Great Southwest Pkwy
<b>Abram St</b>	Bowen Rd	Great Southwest Pkwy
<b>Park Row Dr</b>	Park Springs Blvd	Great Southwest Pkwy
<b>Arkansas Ln</b>	Perkins Rd	Great Southwest Pkwy
<b>California Ln</b>	Bowen Rd	Cooper St

<b>Mayfield Rd</b>	Bowen Rd	Hwy 360
<b>Arbrook Blvd</b>	Melear Dr	Hwy 360
<b>Pleasant Ridge Rd</b>	Poly Web Rd	Cooper St
<b>Bardin Rd</b>	Bowen Rd	East of Matlock Rd
<b>Sublett Rd</b>	Hwy 287	Hwy 360
<b>Southeast Pkwy.</b>	Sublett Rd	Hwy 360

**NORTH & SOUTH**

<b>Street</b>	<b>From</b>	<b>To</b>
<b>Perkins Rd</b>	Pleasant Ridge Rd	Arkansas Ln
<b>Little Rd</b>	Treepoint Dr	Arkansas Ln
<b>Kelly Elliott Rd</b>	Sublett Rd	Pleasant Ridge Rd
<b>Woodside Dr</b>	Pleasant Ridge Rd	Arkansas Ln
<b>Park Springs Blvd</b>	Sublett Rd	Pleasant Ridge Rd
<b>Park Springs Blvd</b>	Arkansas Ln	Park Row Dr
<b>Bowen Rd</b>	Randol Mill Rd	Sublett Rd
<b>Fielder Rd</b>	Arbrook Blvd	NW Green Oaks Blvd
<b>Davis Dr</b>	Arkansas Ln	NW Green Oaks Blvd
<b>Cooper St</b>	Abram St	NW Green Oaks Blvd
<b>Center St</b>	Arbrook Blvd	Interstate - 30
<b>Collins St</b>	Abram St	Southeast Pkwy
<b>Ballpark Way</b>	NE Green Oaks Blvd	Randol Mill Rd
<b>Stadium Dr</b>	Randol Mill Rd	Abram St
<b>New York Ave</b>	Abram St	Webb Lynn Rd
<b>Silo Rd</b>	Sublett Rd	Mansfield Webb Rd
<b>Matlock Rd</b>	Cooper St	Mansfield Webb Rd

TABLE 1: MAJOR THOROUGHFARE SWEEPING (COA IN-HOUSE PROGRAM)

**Contract Sweeping**

The SWFO Supervisor oversees the contract for mechanical sweeping. SWFO staff spot check the work completed by the contractor. Streets predominately used as commercial and/or Industrial streets are not included in the contract. The contracted sweeping schedule is:

- every residential street once per year,
- the Entertainment District once per week,
- major intersections three times per year,
- the airport every other week, and
- emergency cleanup as needed.

1. **Residential Sweeping** – For residential sweeping, the city is divided into 12 districts, and one district is swept each month, per the contract. All neighborhood streets that are considered private are not the responsibility of the City’s sweeping program. The contractor is responsible for removing loose debris from the gutter line and concrete valley gutters. The contract specifies that every effort will be made to leave a neat and clean appearance after completion of each street. The contractor is not expected to make numerous sweeping passes to remove the abundance of fallen leaves that have collected due to the neglect of the local residents. The City of Arlington does not notify residents of the sweeping schedule, and the Sweeping Contractor is not required to. Parked vehicles are not required to be removed from

the public streets. It is the contractor's responsibility to sweep within 5' of parked vehicles that remain on the public street.

2. **Intersection Sweeping** – The contractor is responsible for sweeping 134 pre-determined major intersections three times per year. All loose debris including glass, nails, screws, cigarette butts, and grass clippings must be removed within 250' of the selected intersection. Large debris is to be removed from the roadway by the contractor. All 134 intersections are to be completed in one month's time with a four month interval in between. The sweeping of the intersections is required to occur between the hours of 8:00 pm and 7:00 am.
3. **Entertainment Sweeping** – The listed public roadways that are frequently used for access to the Rangers Ballpark in Arlington, Cowboys Stadium, Six Flags Amusement Park, and Hurricane Harbor, are swept on a weekly basis. The contractor is expected to remove all loose debris from the gutter-line and visible areas in the roadway.
4. **Special Events** – When PWT Severe Weather Operations are activated and de-icing or sanding material is delivered to the roadway, the contractor is provided a list of locations that requiring immediate removal of sanding material. This sweeping service is contracted by the hour.
5. **Airport Sweeping**-The Arlington Municipal Airport also utilizes the service of a general contractor. Areas near the taxi ways, airplane hangars, and parking lots are swept on a bi-weekly basis. This service is also provided as a scheduled hourly charge. The anticipated completion time must not exceed three hours per week. The contractor must check in and check out at the front desk of the front office. An airport representative will or may follow the sweeping vehicle as part of airport safety procedures.

#### SPILL RESPONSE

The purpose of City of Arlington spill response program is to remediate spills of hazardous and non-hazardous materials on roads and streets. This program is described in detail in the "Illicit Discharge Detection and Elimination" Section (III) of this document.

#### DEICING AND/ OR SANDING ACTIVITIES

The City of Arlington may experience severe weather events that require deployment of sanding and/or deicing crews. Deicing operations are scaled to meet the needs of four time frames: Morning Traffic (4:00 a.m. to 9:00 a.m.), Midday Traffic (9:00 a.m. to 3:00 p.m.), Evening Traffic Conditions (3:00 p.m. to 8:00 p.m.), and Deep Night Situations (8:00 p.m. to 4:00 a.m.). Deicing operations are conducted in accordance with an established priority locations list first, then in response to called-in requests. The priority locations are identified as follows:

**Bridges & Crossings**



- I-20 Crossings (7)
- I-30 Crossings (8)
- SH 360 Crossings (9)
- Spur 303 (3)
- W. Division (SH180) (5)
- Hwy 287 (1)

**Hospital Emergency Entrances**



- Arlington Memorial - Randol Mill Rd.
- MCA - Off East Mayfield Rd.

State Highways (I-20, I-30, and SH-360) are maintained by TXDOT. SH-157, SH-180, and Spur 303 are also maintained by TXDOT, but PWT personnel may assist in sanding selected locations along these three highways only.

All deicing operations are performed by personnel who are fully knowledgeable in the operation of the deicing equipment and proficient in deicing operations. After the ice and/or snow event, the deicing agent is removed from bridges and roadways as needed, utilizing the City's street sweeper or by a contracted sweeping company. An effort is made to remove deicing agents from roadways after the agents are no longer required in order to prevent the deicing agent from contaminating stormwater runoff.

## II. Post Construction Stormwater Control Measures

Stormwater discharges from redevelopment or new development sites have the potential to negatively impact water quality. Stormwater control measures addressing post-construction discharges can help mitigate these impacts and/or improve water quality. The program activities under this element include **Comprehensive Planning, New Development and Redevelopment Regulations, Implementation and Maintenance of Structural and Non-Structural Best Management Practices, and Flood Control Projects.**

### Comprehensive Planning Process

*“The permittees shall 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 must include A) limiting increases in erosion and the discharge of pollutants in storm water as a result of new development; and B) reducing erosion and the discharge of pollutants in storm water from areas of redevelopment.” (TPDES Permit, Part III, Section B.2.b.i.)*

The 1992 Adopted Comprehensive Plan of the City of Arlington has been used by the City as the master or general plan for the City and its extraterritorial jurisdiction to guide the overall physical growth of the community and the provision of public facilities and services. Identified goals within the 1992 Adopted Comprehensive Plan that pertain to quality of stormwater (emphasis added) include:

- Attain and maintain air and water quality standards; eliminate objectionable noise, odor, and visual obstructions in residential neighborhoods; and encourage the protection of environmentally sensitive areas.
- Prevent loss of life, destruction of property and degradation of water quality resulting from flooding, soil erosion, and slope failure.
- Provide recreation facilities that are strategically located throughout the community, a linear park system linking Arlington's community and neighborhood park facilities, and numerous high quality recreational opportunities - all of which will maintain and enhance Arlington's quality of life.

Additionally, during construction, the City's Design Criteria Manual (DCM) requires the submittal of a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the TPDES General Permit. Sites are categorized as Small Sites (less than one acre) or Large Sites (greater than one acre) and SWPPP checklists for each are appendices to the Manual. A Notice of Intent (NOI) is required for sites larger than five acres. Prior to construction, all temporary stormwater BMPs shall be installed. The sites must be inspected by qualified personnel supplied by the property owner as well as the City's Environmental Compliance Officers (ECOs). Deficiencies shall be corrected by the owner in accordance with the schedule provided in the Manual which corresponds with TPDES requirements (see Design Criteria Manual Section 4.3.B for residential construction requirements and Section 5.3.C for commercial requirements). The requirements for both types of construction are the same.

**New Development and Redevelopment**

*Within one year of permit issuance, the requirement to implement a comprehensive master planning process (or equivalent) shall be expanded to include all new development and redevelopment projects that disturb one acre or more of land, including projects less than one acre that are part of a larger common plan of development or sale that will result in disturbance of one acre or more. (TPDES Permit, Part III, Section B.2.b.ii.)*

The City’s current Design Criteria Manual was developed in 2003 and contains requirements for Post-Construction Stormwater BMPs. Chapter 4, Section 4.3 includes the requirements for residential subdivision development and Chapter 5, Section 5.3 includes the requirements for commercial development. There is no separate provision for redevelopment. The redevelopment requirements are the same as for new development and are based on increases in impervious cover.

The Design Criteria Manual contains a list of acceptable post-construction BMPs. The number of required Post-Construction BMPs is based on the amount of disturbed area as follows:

Disturbed Area	Number of BMPs	
	Residential	Commercial
12,000 sf – 5 acres	1	1
5 acres – 10 acres	2	2
10 acres – 20 acres	2	3
More than 20 acres	3	4

TABLE 2: BMPS BASED ON DISTURBED AREA

**Implementation and Maintenance of Structural and Non-Structural BMPs**

*“The permittees shall evaluate the existing SWMPs as necessary to ensure that this MCM includes a regulatory mechanism such as an ordinance to implement and enforce the new requirements of this program, and shall ensure that the SWMP includes strategies for structural and nonstructural controls (i.e., BMPs) appropriate for the community. In addition, the permittees shall provide for adequate long-term operation and maintenance of BMPs.” (TPDES Permit, Part III, Section B.2.b.iii.)*

The City of Arlington’s Unified Development Code (UDC), formerly the Subdivisions Ordinance, acts as the regulatory mechanism for the enforcement of post-structural stormwater controls. The UDC specifies in Article 6, Section 6.1, H, that one of the purposes of the regulation is to: “minimize the pollution of streams and ponds; to provide for the adequacy of drainage facilities; to control stormwater runoff; to minimize erosion

and siltation problems, to safeguard the water table; to encourage the wise use and management of natural resources; and enhance the stability and beauty of the community and the value of the land.”

The UDC also provides that each subdivision (development) shall provide “adequate public facilities” that include the drainage necessary to serve the proposed development (see UDC, Article 6, Section 6.2.1). Drainage and stormwater facilities are adequate when: (1) stormwater runoff attributable to new development or redevelopment complies with the minimum standards of the UDC and the Design Criteria Manual; and (2) to the maximum extent practicable, permanent BMPs, as described in the DCM, maintain the predevelopment characteristics of any natural creek that ultimately receives stormwater runoff from the development. That is, “designs for development shall manage stormwater in a manner that protects and/or improves stormwater quality by addressing the development’s potential to cause erosion, pollution, siltation, and sedimentation in the MS4 and natural creeks. The goal is to maintain after development, to the maximum extent practicable, the predevelopment characteristics of stormwater runoff from the development. It is the developer’s responsibility to ensure that designs for the development meet the stormwater management requirements of adopted City Codes” (see UDC, Article 6, Section 6.5.1, D.)

### **Flood Control Projects**

*The permittees shall assess the impacts on the receiving waters for all flood control projects. Where feasible, new flood control structures must be designed, constructed, and maintained to provide erosion prevention and pollutant removal from storm water. If applicable, the retrofitting of existing structural flood control devices to provide additional pollutant removal from storm water shall be implemented, to the maximum extent practicable. (TPDES Permit, Part III, Section B.2.b.iv.)*

Incorporating water quality features into capital improvement projects for flood control provides an effective way of addressing pollutant transport while providing local flood relief. Additionally, reducing the volume of runoff from developing sites reduces the volume of water available to convey pollutants downstream, thereby reducing flood-borne contaminant transport.

### **FUTURE FLOOD CONTROL STRUCTURE ELEVATION**

The Design Criteria Manual requires all Capital Improvement Projects, including future public flood control projects, be evaluated for incorporation of design features that will enhance water quality. In addition, the City is participating in regional deployment of Integrated Stormwater Management (iSWM) practices developed through the North Central Texas Council of Governments. The purpose of this manual is to integrate stormwater quantity and quality design by providing comprehensive guidelines for planning, design, construction and maintenance of stormwater infrastructure.

The City’s priority, with respect to its stormwater program, is alleviation of structural flooding. The current estimate for flood control projects is in excess of \$300M. Until November 2014, COA’s Stormwater Utility Fee was \$4.25 per equivalent residential unit (ERU), allowing for an annual Stormwater capital budget between \$5M and \$7M. In November 2014, City Council approved an increase in the Stormwater Utility Fee by \$0.50 per year to a maximum of \$7.50 in 2021. This increase allows a 30-year program for known flood control projects.

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## WATERSHED STUDIES

Historically, the City's stormwater program was based purely on drainage complaints. As concentrations of structural flooding complaints were identified, flood control projects were developed and ranked. In 2011, the COA Stormwater Management Division began systematically studying local watersheds. Nine major watersheds were identified. Three studies are nearing completion, while six watershed studies are in progress. Completion of all studies is expected by 2019.

Each watershed study includes the following elements:

- New surveyed cross-sections
- Updated hydrology
- Updated, routed hydraulics
- Stream stability assessment (typically limited geomorphology)
- Problem Area Identification
- Project Identification and Ranking
- Physical Map Revisions

While the City's priority is flood control projects, stream stability assessments are included in order to provide a baseline of stream erosion issues as well as attempt to coordinate flood control projects in areas where erosion issues are also prominent. This effort potentially improves water quality by reducing erosion problems.

In addition to this formal watershed study program, the Stormwater Management Division is also encouraging natural streambank stabilization projects over traditional "hard" solutions such as concrete lining or gabions. The City's Design Criteria Manual no longer allows concrete lined channels outright and encourages leaving existing creeks in a natural condition. A flood study must be performed for all proposed modifications to an open channel. Gabions, pre-cast concrete blocks, and native stone may be allowed with limited use. Preference is given to vegetated or bio-engineered channels.

Finally, all projects with known downstream flooding are required to perform a downstream analysis that confirms that there will be no increases of flooding on downstream properties. Mitigation, such as stormwater detention, may be required.

Operation and maintenance of future flood control projects will be in accordance with operation and maintenance activities currently conducted by the SWFO Division as described in Section 1, Structural Controls Operations and Maintenance.

### Regulatory Updates

The Stormwater Management Division, with the help of consultants and external stakeholders, is currently developing a new Unified Stormwater Ordinance (USO) and updating the Design Criteria Manual. The current draft includes Total Suspended Solids (TSS) removal requirements for new development and redevelopment as well as hydrocarbon removal requirements for large parking lots and vehicle service businesses. The proposed Design Criteria Manual contains a list of recommended BMPs with their TSS removal efficiency. The Manual refers to the Integrated Stormwater Management Manual (iSWM) developed for the region by the NCTCOG. Adoption of these new policies is anticipated by December 2016.

### III. Illicit Discharge Detection and Elimination (IDDE)

*“The permittees shall prohibit illicit non-stormwater discharges from entering the MS4.” (TPDES Permit, Part III, Section B.2.c.i.)*

Illicit Discharges are defined by the United States Environmental Protection Agency (U.S. EPA) as “any discharge to the municipal separate storm sewer system that is not composed entirely of stormwater except for discharges allowed under a NPDES [TPDES] permit or waters used for firefighting operations.” All other discharges to the MS4 are prohibited.

The City of Arlington’s illicit discharge detection and elimination (IDDE) program focuses on those activities that detect and eliminate illicit discharges to the storm sewer system and addresses household hazardous waste collection, illegal dumping, yard and animal wastes, and sanitary sewer overflows.

The IDDE program consists of and/or addresses the following: **Allowable and Prohibited Stormwater Discharges; Elimination of Illicit Discharges and Improper Disposal; Overflows and Infiltration; Household Hazardous Waste (HHW); MS4 Screening and Illicit Discharge Inspections; MS4 Mapping; and Spill Prevention and Response.**

Citizens are also able to report illicit discharges (either online or via telephone) to the City of Arlington’s customer service center (Action Center). City staff responds to citizen complaints and documents responses. Records are maintained by the Stormwater Division.

#### **Allowable and Prohibited Stormwater Discharges**

*“For the purposes of this permit, the following discharges need not be addressed as illicit discharges by the permittees nor prohibited from entering the MS4: (A) discharges regulated by a separate NPDES or TPDES permit; (B) discharges for which an NPDES or TPDES permit application has been submitted or neither an NPDES or TPDES permit is required; and (C) miscellaneous non-stormwater discharges.” (TPDES Permit, Part III, Section B.2.c.ii.)*

#### **ALLOWABLE DISCHARGES**

The City of Arlington, per its Stormwater Pollution Prevention Control Ordinance (SWPCO), Article II, Section 2.01(B) exempts the following discharges from the prohibition on non-stormwater entering the MS4:

1. A discharge authorized by, and in full compliance with, an NPDES or TPDES permit (other than the NPDES permit for discharges from the MS4);
2. A discharge or flow resulting from fire-fighting by the Fire Department;
3. A discharge or flow of fire protection water that does not contain oil or hazardous substances or materials that the Fire Code in this Code of Ordinances requires to be contained and treated prior to discharge, in which case treatment adequate to remove harmful quantities of pollutants must have occurred prior to discharge;

4. Agricultural storm water runoff;
5. A discharge or flow from water line flushing, but not including a discharge from water line disinfection by superchlorination or other means unless the disinfecting chemical has been removed or attenuated to the point where it is not a pollutant;
6. A discharge or flow from lawn watering, landscape irrigation, or other irrigation water;
7. A discharge or flow from a diverted stream flow or natural spring;
8. A discharge or flow from uncontaminated pumped groundwater or rising groundwater;
9. Uncontaminated groundwater infiltration (as defined in 40 CFR §35.2005(20)) to the MS4;
10. Uncontaminated discharge or flow from a foundation drain, crawl space pump, or footing drain;
11. A discharge or flow from a potable water source not containing any harmful substance or material from the cleaning or draining of a storage tank or other container;
12. A discharge or flow from individual residential car washing (external surfaces only);
13. A discharge or flow from a riparian habitat or wetland.
14. Dechlorinated swimming pool water (not filter backwash from a swimming pool or hot tub) that: contains no harmful quantities of chlorine or other chemicals, and has a pH of 6.0 to 9.0, and the flow does not cause flooding or property damage.
15. Air conditioning condensate that is not contaminated.
16. A discharge or flow from cold water (or hot water with prior permission of the director) used in street washing or cosmetic cleaning that is not contaminated with any soap, detergent, degreaser, solvent, emulsifier, dispersant, or any other harmful cleaning substance or substance being removed from the surface being cleaned.
17. Other similar occasional incidental non-storm water discharges.

Other permitted discharges are outlined in Part III, Section B.2.c.iv. of the TPDES permit.

#### **PROHIBITED DISCHARGES**

All other discharges to the MS4 not outlined above and/or in Part III, Section B.2.c.iv. of the TPDES Permit are prohibited. Prohibited discharges are outlined in Article III, Section 3.01 (C) of the City of Arlington's SWPCO. These include:

1. Any used motor oil, antifreeze, hydraulic fluid, or other motor vehicle fluid;
2. Any industrial waste;
3. Any hazardous waste, including household hazardous waste;

4. Any garbage, domestic sewage or septic tank waste, cooking oil, grease trap waste, or grit trap waste;
5. Any trash, rubbish, yard waste, or other floatable material;
6. Any wastewater from a commercial car wash facility; from any vehicle washing, cleaning, or maintenance at any new or used automobile or other vehicle dealership, rental agency, body shop, repair shop, or maintenance facility; or from any washing, cleaning, or maintenance of any business or commercial or public service vehicle, including a truck, bus, or heavy equipment, with the exception that the exterior of new or used automobiles for sale at a dealership may be rinsed with non-heated potable waters as long as no pollutants (including but not limited to detergent, surfactants, emulsifiers, etc.) enter the MS4;
7. Any wastewater from the washing, cleaning, de-icing, or other maintenance of aircraft;
8. Any wastewater from a commercial mobile power washer or from the washing or other cleaning of a building exterior or exterior mechanical equipment that contains any soap, detergent, degreaser, solvent, other cleaning substance, or a pollutant from the item that is being cleaned, or that has been produced by wash water applied at pressures elevated above the distribution system pressure, or that is at a temperature that has been elevated by induced heating;
9. Any wastewater from commercial floor, rug, or carpet cleaning;
10. Any wastewater from the washdown or cleaning of parking lots, streets, or other pavement that contains soap, detergent, solvent, degreaser, emulsifier, dispersant, or any other cleaning substance, or that has been produced by wash water applied at pressures elevated above the distribution system pressure, or that is at a temperature that has been elevated by induced heating; or any wastewater from the washing or cleaning of parking lots, streets, or other pavement where any spill, leak, or other release of hazardous material, hazardous substance, hazardous waste or other pollutant has occurred;
11. Any effluent, overflow or blowdown, from a cooling tower, condenser, compressor, emissions scrubber, emissions filter, or boiler;
12. Any ready-mixed concrete, mortar, ceramic, or asphalt base material or hydromulch material, or any wastewater or substance from the cleaning of any vehicle or equipment containing, or used in transporting or applying, such material;
13. Any runoff or washdown water from an animal pen, kennel, or fowl or livestock containment area;
14. Any filter backwash from a swimming pool;

15. Any swimming pool or hot tub water that has not been dechlorinated, has a pH of less than 6 or greater than 9, causes flooding, property damage, or damage to the environment;
16. Any discharge from water line disinfection by superchlorination or other means unless the disinfecting chemical has been removed or attenuated to the point where it is not a pollutant;
17. Any fire protection water containing oil or hazardous substances or materials that the Fire Code in this Code of Ordinances requires to be contained and treated prior to discharge, unless treatment adequate to remove pollutants occurs prior to discharge. This prohibition does not apply to discharges or flow from firefighting by the Fire Department;
18. Any wastewater from a water curtain in a spray room used for painting vehicles or equipment;
19. Any contaminated or unpermitted storm water discharge associated with an industrial activity;
20. Any substance or material that will damage, block, or clog the MS4;
21. Any release from a petroleum storage tank (PST), or any leachate or runoff from soil contaminated by a leaking PST, or any discharge of pumped, confined, or treated wastewater from the remediation of any such PST release.
22. Any rubble, debris, rubbish, tile, concrete, brick, asphalt, or other building material resulting from demolition.

Additionally, the SWPCO states:

No person shall introduce or cause to be introduced into the MS4 any harmful quantity of sediment, silt, earth, soil, or other material associated with clearing, grading, excavation, landfilling, or other construction activities (including any placement, movement, removal, or disposal of soil, rock, or other earth materials) in excess of what could be retained on site or captured by employing sediment and erosion control measures to the maximum extent practicable; and,

No person shall connect an interior drain or any other source of wastewater, domestic or industrial, to the MS4 or allow such a connection to continue.

### **Elimination of Illicit Discharges and Improper Disposal**

*“The permittees shall require the operator of an illicit discharge or improper disposal practice to eliminate the illicit discharge or stop the improper disposal practice as quickly as reasonably possible. If the elimination of an illicit discharge within 30 days is not possible, the permittees shall require the operator of the illicit discharge to remove the discharge according to an expeditious schedule. Until the illicit discharge or improper disposal is eliminated the permittees shall require the operator of the illicit discharge to take all reasonable measure to minimize the discharge of pollutants to the MS4.” (TPDES Permit, Part III, Section B.2.c.vii.)*

The City of Arlington's Stormwater Pollution Control Ordinance (SWPCO), as amended, outlines enforcement actions they City may take to prevent illicit discharges to the MS4. Enforcement of this ordinance is primarily the duty of the Public Works and Transportation Department, Stormwater Management Division, Environmental Compliance Group. Personnel within this group are also responsible for MS4 screening and monitoring activities, inspection of construction sites and industrial facilities, spill response, and other investigations. A broad variety of enforcement options are available should a violation of the SWPCO be observed. These include warning notices, notices of violation (NOVs), consent orders, compliance orders, remediation, abatement, and restoration orders, emergency cease and desist orders, stop work orders, and criminal and civil citations.

Provisions of these chapters are outlined in Article VIII, Section 8.01 and Article X, Section 10.01 and 10.02 of the Stormwater Pollution Control Ordinance.

### **Overflows and Infiltration**

*"The permittees shall implement controls where necessary and feasible to prevent dry weather and wet weather overflows from sanitary sewers into the MS4. The permittees shall limit the infiltration of seepage from municipal sanitary sewers into the MS4." (TPDES Permit, Part III, Section B.2.c.viii.)*

The City of Arlington Water Utilities Department (WUD) maintains an ongoing sanitary sewer inspection and repair program. An aggressive program for collection system repairs and renewals to address identified issues is ongoing. To further improve inspection of the collection system, geographical information systems (GIS) are used to spatially inventory water utilities infrastructure. For example, GIS is used to map creek crossings and categorize the crossings by crossing type and potential for erosion through visual inspection. Photographs and location maps are included to provide additional information on the sites. All creek crossing sites are re-inspected annually, and sites identified as having a high possibility for erosion problems are inspected after every substantial rainfall event.

In addition, the department has increased efforts with closed circuit television inspection programs and preventative maintenance cleaning programs. Positive indications of leaks in the system, regardless of location, are followed by procedures to contain any spill, control the leakage, and notify Environmental Compliance staff of the leak, its location, and the approximate time to bring the leak under control. Repairs are initiated after an analysis of the situation and proper procedures are determined. The programs outlined above provide a thorough and continuing evaluation of the collection system, and it is through these programs that the City's sanitary sewer system integrity is maintained. The combined investigatory actions of the ongoing I & I inspection programs, and the rigorous repair and replacement schedules maintained greatly limits seepage from the sanitary sewer system.

Prevention of seepage problems from malfunctioning on-site sewage facilities (OSSF) in areas not served by the City of Arlington sanitary sewer system is addressed by a multi-faceted permitting, qualification, and inspection procedure according to the requirements outlined by the Texas Commission on Environmental Quality (TCEQ). Code Enforcement Services is authorized to enforce all laws and rules related to on-site sewage facilities.

The property owner must obtain a permit in order to construct, alter, repair, or operate an OSSF within the city. A permit will not be issued if the sanitary sewer is within five hundred feet (500') of the proposed OSSF. If the city determines that the property owner cannot connect to the sanitary sewer, then the permitting and reviewing process begins. A site evaluation of the property must first be conducted to determine soil suitability, topography, the location from wells and natural waterways, and the location of structures on the property. A system is selected based upon the conditions noted in the site evaluation. A planning document specifying the type of treatment units, disposal system, and other necessary information must be submitted and reviewed prior to installation. If the system's location, installation, and capacity meet the TCEQ requirements, the owner is given a permit to construct or repair the system. Upon proper installation and approval from the City, a permit to operate is issued to the owner of the property which allows the operation of the system. An OSSF permit can be revoked or suspended if the system malfunctions or seepage of wastewater occurs. Both civil and criminal penalties may be assessed for operating an OSSF without a permit or for violation of any of the requirements.

The City continues to monitor OSSF systems and respond to all complaints concerning any malfunctioning system. All complaints are responded to within 48 hours. The resident or owner is advised to immediately correct the problem by having the septic tank pumped out by a licensed hauler. They are then given notice to restrict water use and to have the system repaired within 10 days. The same procedure used when installing a new system is also followed for repair to a system per TCEQ Rules. If the problem is ongoing and is not corrected, the water supply can be turned off if city water is available. Citations are also written to ensure compliance. The aerobic systems that use surface irrigation are monitored three times a year by a contract maintenance agreement. This maintenance report is sent to the city for our records to ensure compliance. The City has a fact sheet from the Texas Department of Health detailing the care and maintenance of OSSF to prevent non-point sources of pollution. The city conducts all real estate inspections required by lending institutions as a result of the sale of a home. Any OSSF that is malfunctioning is required to connect to the sanitary sewer system, if available. These ongoing programs protect the municipal storm sewer system from seepage from on-site sewage systems.

### Household Hazardous Waste (HHW)

*"The permittees shall prohibit the discharge or disposal of used motor vehicle fluids, household hazardous wastes, and the intentional disposal of collected quantities of grass clippings, leaf litter, and animal wastes into the MS4.*

*A. If applicable, the permittees shall ensure the implementation of programs to collect used motor vehicles fluids (including, at a minimum, oil and antifreeze and household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycling, reuse, or proper disposal. Such program shall be readily available to the residential sector within the MS4 and shall be publicized and promoted on a regular basis.*

*(TPDES Permit, Part III, Section B.2.c.ix.)*

### HHW

Many households in Arlington routinely use small amounts of fertilizers, pesticides, herbicides, motor oil, paint, batteries, solvents, and other chemicals in the day-to-day upkeep of their homes. The materials are

considered hazardous household wastes and can pose serious threats to water quality if improperly disposed through trash collection or the storm drainage system.

As a result, the City of Arlington partners with the City of Fort Worth, Texas to allow citizens to dispose of HHW. The City of Fort Worth operates a permanent HHW collection center known as the Environmental Collection Center (ECC). The facility is located at 6400 Bridge Street (I-820 and I-30). The facility was made possible from grant funding provided by the TCEQ through the NCTCOG with the stipulation that the facility would be available for regional use. The City of Fort Worth staffs and manages the facility. The ECC is open to the public from 11 am to 7 pm on Thursday and Friday and from 9 am to 3 pm on Saturday. Residents of Arlington can take a variety of wastes to the ECC for disposal, free of charge. The center will accept all types of automotive fluids, batteries, and household chemicals; fluorescent lights, pesticides, herbicides, paint, and most types of hazardous materials. The ECC does not accept: ammunition, medical waste, explosives, radioactive materials, electronics, gas cylinders, and tires.

With the understanding that some Arlington citizens either cannot or will not travel to the center to dispose of their HHW, the City of Arlington purchased a mobile collection unit (MCU) with grant funds obtained through NCTCOG. The MCU is used to hold local collection events within different areas of the City eleven times per year.

The combination use of the Fort Worth ECC, Arlington's MCU, and public education efforts comprise the HHW program of the City of Arlington.

### GRASS CLIPPINGS AND LEAF RECYCLING

The City of Arlington prohibits grass clippings and leaf litter in the storm sewer system. Not only do they clog the storm drains, causing flooding, but they add organic material to the drainage system that can provide a breeding ground for bacteria and insects. Grass clippings and leaf litter are addressed as outlined below:

#### Grass Clippings

The City banned the curbside collection of bagged grass clippings in 1993. Residents are encouraged to mulch grass clippings back into their yards as they mow or compost their clippings. Those residents who decide to bag their clippings are required to take them to the City's landfill. Republic Services, the operator of the City's landfill, will take bagged clippings at an area of the landfill specifically reserved for yard waste. The charge to bring a pick-up truck load of clippings to the landfill is \$6.00 for residents.

#### Leaves

The City of Arlington offers leaf recycling drop off locations throughout the city from November through February of each year. Arlington residents may bring bagged leaves to one of five collection sites for leaf recycling.

Improper yard disposal (e.g. leaf blowing) can be challenging to enforce and is thus primarily addressed through outreach and education.

### ANIMAL WASTES

The City of Arlington addresses animal wastes related to pets through outreach and education, and appropriate code enforcement concerning leash and pet defecation ordinances. (See the City of Arlington, "Animals" Ordinance available from the City Secretary's Office or at [www.arlingtontx.gov](http://www.arlingtontx.gov)).

## MS4 Screening and Illicit Discharge Inspections

*“The permittees shall implement the Dry Weather Screening Program described in Part III, Section B.2.h.i. of this permit, to locate portions of the MS4 with suspected illicit discharges and improper disposals. Follow-up activities to eliminate illicit discharges and improper disposals may be prioritized on the basis of magnitude and the nature of the suspected discharge; sensitivity of the receiving water; or other relevant factors. The entire MS4, but not necessarily each individual outfall, shall be screen at least once per five years.” (TPDES Permit, Part III, Section B.2.c.x.)*

The City of Arlington Dry Weather Field Screening program tests major outfalls throughout the city a minimum of once every five years. Illicit discharge inspections are also conducted in response to citizen complaints, industrial facility outfall evaluation during routine inspections, and emergency response to spills and fish kills.

The Dry Weather Field Screening Program is described in more detail in Section VIII of this document (Monitoring, Evaluation, and Reporting.)

### NPDES / TPDES Permittee List

*“The Permittees shall maintain an updated list of dischargers that discharge directly to the MS4 and that have been issued an NPDES or a TPDES permit. The list shall include the name, location, and permit number (if known) of the discharger.” (TPDES Permit, Part III, Section B.2.c.xi.)*

Maintaining an updated list of dischargers allows the City to identify facilities operating without permits or with expired permits. Currently, the city maintains separate construction and industrial permittee lists. The construction list includes the name and location of the construction activity. Industrial lists include the name, location, operator, contact information, permit number, and permit status of the facility. The construction database is populated with information derived from NOI and SWPPPs submitted to the City of Arlington Community Development and Planning Department. The industrial database is populated using information from the TCEQ Central Registry and Water Quality Permits search tool and Certificate of Occupancy permits granted by the City of Arlington Community Development and Planning Department.

A list of permitted facilities is available upon request from the Asst. Director of Public Works - Stormwater.

### MS4 Mapping

*“The permittees shall maintain a current, accurate MS4 map of: the location of all MS4 outfalls; the names and locations of all waters of the U.S. that receive discharges from the outfalls; and any additional information needed by the permittees to implement its SWMP. When possible, the outfalls should be located using geographic position system (GPS) and photographs taken to provide baseline information.” (TPDES Permit, Part III, Section B.2.c.xiii.A.)*

*“The permittees shall document the source information used to develop the MS4 map, including how the outfalls are verified and how the map will be regularly updated.” (TPDES Permit, Part III, Section B.2.c.xiii.B.)*

*“Within one year from the date of permit issuance, the permittees shall develop and implement procedures to ensure that the above requirements are met for all new portions of the MS4.” ((TPDES Permit, Part III, Section B.2.c.xiii.C.)*

*“Within three years from the date of permit issuance, the permittees shall demonstrate that it has evaluated all existing portions of the MS4 and that the new mapping requirements have been implemented to the maximum extent practicable.” (TPDES Permit, Part III, Section B.2.c.xiii.D.)*

Maintaining an accurate MS4 map is critical to the success of any stormwater management program. It allows for timely provision of emergency response and IDDE throughout the system. The City presently operates a system with approximately 1,135 storm sewer outfalls, 78.77 miles of storm sewer pipe, and about 5,945 inlets. In the previous permit term, the City implemented an asset identification and inventory program to track all MS4 assets. Unique identifiers are assigned to allow for efficient tracking of system conditions, inspections, and maintenance. The system is GIS based and integrates system inventory data into a system map.

The field asset verification program includes **outfall verification, inlet and manhole locations, and sewer pipe identification.**

#### **OUTFALL VERIFICATION**

Outfall locations are verified by SWFO staff. Outfalls are verified by using a survey grade GPS system. Once verified, data is uploaded to the asset inventory database. Staff physically walk the infrastructure system to identify all outfalls (previously identified or not). The outfall condition is noted, as well as the size and shape.

Environmental Compliance personnel also verify outfall locations as part of the Dry Weather Screening Program. Based on historical mapping locations, compliance staff verifies the existence or non-existence of major outfalls. Location, size, pipe type, and condition are also noted. Receiving waters for these outfalls will be incorporated during the current permit term.

Outfall locations on industrial facilities are verified as part of industrial site compliance inspections with compliance staff physically locating and inspecting each sample outfall identified in the facility’s Stormwater Pollution Prevention Plan (SWPPP). Outfalls that require repair or other improvements are noted in the facility inspection report. Significant variances between the SWPPP and observed field conditions are also noted and may warrant an NOV. If compliance is not achieved, a citation is issued.

#### **INLET AND MANHOLE LOCATIONS**

Inlets and manholes are verified by SWFO staff. Inlet location verification includes verification using survey grade GPS. Inlet condition is noted including the need for cleaning or maintenance. Inlet data is uploaded electronically into the asset database.

## SEWER PIPE IDENTIFICATION

Most storm sewer pipe infrastructure is entered post construction into the GIS inventory database by COA GIS technicians. In the absence of construction plans, the Pipe Inspection Crews (SWFO) identify and map pipe infrastructure. Crews use the TV inspection camera equipment to aid in identifying infrastructure missing from the GIS inventory database.

Regular updates, corrections, and additions to this data allow for effective management of the MS4 infrastructure as a whole.

## Spill Prevention and Response

*“The permittees shall implement existing program which prevent, contain, and respond to spills that may discharge into the MS4. The spill response may include: (A) a combination of spill response actions by the permittees or another public or private entity, and (B) legal requirements for private entities within the jurisdiction of permittees.” (TPDES Permit, Part III, Section B.2.c.xiv.)*

Primary sources for hazardous material spills include **vehicle transport** of materials through the city and/or **storage facilities** located within the city limits. **Response procedures for hazardous material spills** are outlined below.

### VEHICLE TRANSPORT

The City of Arlington, in an attempt to prevent hazardous material spills, has confined trucks carrying hazardous material through Arlington to Interstate Highway 20 (IH-20) via its Traffic Ordinance. These transport vehicles may use Interstate Highway 30 (IH-30) or State Highway 360 (SH-360) for deliveries, but not as a through-traffic route. When making hazardous materials deliveries, the trucks must first use arterials, then collectors, and then local streets. Upon completion of their deliveries, trucks must return using the reverse order route.

### STORAGE FACILITIES

The City of Arlington Fire Department (COA FD) conducts routine, recurring inspections of businesses in Arlington in accordance with the current International Fire Code. The Fire Code addresses the proper storage, use, dispensing, mixing, and handling of flammable and combustible liquids and other hazardous materials. During an inspection, Fire Prevention Specialists and Inspectors evaluate if the business stores hazardous materials at or above reportable quantities. If so, Fire Prevention Specialists and Inspectors provide the business owner with instructions on the appropriate reporting procedures.

Facilities storing hazardous materials at or above reportable quantities are reported to Fire Department's Hazardous Materials Response Team (HMRT). The HMRT files the information electronically and uses the information to identify the owner or party responsible should a release or spill occur. Those responsible parties or owners are required to arrange for clean-up efforts where necessary.

Additionally, those industries classified under Standard Industrial Codes (SIC) codes 20-39, 46-49, 51, 75, 76, 80, 82, and 84, that meet certain storage quantity prerequisites, must provide the Fire Department with information regarding storage of hazardous materials at those facilities. More specifically, the submittals are to include a Superfund Amendments and Reauthorization Act (SARA) Title III Tier One or Tier Two information

form and a site plan of the property that indicates the storage location of the hazardous materials with respect to the overall layout of the facility.

### **RESPONSE PROCEDURES FOR HAZARDOUS MATERIAL SPILLS**

In the event of a hazardous and/or toxic material spill, the COA FD is the First Responder. Once on-site, the first arriving COA FD officer is responsible for monitoring the spill status, executing evacuation procedures if necessary, and if the size of the spill should warrant such action, coordination of activities while on the site with the City's Environmental Compliance staff.

Guidance documents used by the Incident Commander and other COA FD officials to aid in spill site assessment, containment, and remediation are provided by the "Hazardous Materials Operations" section of the Fire Department's Tactical Guidelines. Assessment of the severity of the spill is made by the COA FD Incident Commander. Depending on the size, nature, and severity of the spill, the Incident Commander will likewise make the determination to contact the Hazardous Materials Response Team (HMRT) and/or the Environmental Compliance staff for advice on the most appropriate remediation of the spill. If the nature of the spill warrants, Environmental Compliance staff ensures proper notification of the spill incident to the appropriate local, state, and/or federal agencies either by the Principal Responsible Party (PRP) or by the Environmental Compliance staff.

Supplemental guidance pertaining to spill response and mitigation is found in the City's Emergency Operations Plan (EOP). Annex P to the EOP, "Hazard Mitigation", describes coordinated hazard mitigation planning and implementation measures to accomplish the long-term prevention or reduction of the adverse impact of natural and man-made hazards on the citizens of Arlington, Texas. Annex Q to the EOP, "Hazardous Material", details identification and reduction of the threat to public health and safety resulting from an accident involving the release of hazardous materials as well as to prevent the destruction of property, either public or private.

Final cleanup and disposal of hazardous materials are handled either on an immediate or non-immediate hazard basis. For immediate hazards, the Principle Responsible Party (PRP) (if identified) is directed to remove the spill with the aid of a private disposal company. If the PRP does not cooperate or is not identifiable, the private disposal firm is contacted by the Environmental Compliance staff or the HMRT to remove the hazard. If no immediate danger is apparent, the HMRT will issue a written notice to the PRP requesting removal, quoting the appropriate fire code, then over-pack, if needed, label, and log materials and assure proper storage until removal can be safely instituted. Environmental Compliance staff will follow-up with a written notice to ensure removal. Citations are issued to the responsible party for non-compliance. If the PRP cannot be identified and there is no immediate hazard, the HMRT, if needed, will properly over-pack materials for storage in a Hazardous Materials Storage Building.

#### **About HMRT**

The COA FD HMRT provides guidance, technical information, containment, and if deemed feasible, physical remediation of hazardous material spills. The team's personnel are trained to respond to incidents, contain hazardous materials, and to act as a hazardous materials clearinghouse for Fire officers in the field. Training includes extensive education in aspects of hazard assessment, firefighting, rescue, and hazard containment. Members of the HMRT team are likewise fully trained in the use of protective equipment and clothing, including levels A, B, and C. The HMRT operates out of Station No. 6 utilizing a large carry-all van equipped with an onboard personal computer. HMRT personnel may be assigned to one or more functions during a spill incident. These functions include research, planning, entry, support,

decontamination, and medical treatment. In the event of simultaneous incidents or unforeseen problems, assistance may be rendered by outside agencies, such as the City of Fort Worth.

## IV. Pollution Prevention and Good Housekeeping (PP/GH)

Every day, municipal employees engage in a variety of activities that influence water quality. Some activities, like street repair and maintenance, can negatively impact water quality, while others, such as street sweeping, storm drain maintenance, and employee training, can help improve it. The City of Arlington's goal is to design a program that reduces the influence of activities that negatively impact water quality and increase the influence of activities that help improve it.

The City of Arlington's PP/GH program focuses on reducing pollutant runoff from municipal operations. It includes **PP/GH program creation and implementation; waste handling; pesticide, herbicide, and fertilizer application; and listings of municipal facilities.**

### PP/GH Program Creation and Implementation

*"Within one year from date of permit issuance, the permittees shall implement a pollution prevention and good housekeeping program for municipal operations. The program must include MCMs that address:*

- 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 of pollutants to the MEP from road repair, equipment yards, and material storage facilities, or maintenance facilities; and*
- C. Training for all identified employees responsible for municipal stormwater operations which includes information on preventing and reducing stormwater pollution from all municipal operations subject to this MCM.*

*(TPDES Permit, Part III, Section 2.d.i.)*

### IDENTIFICATION AND IMPLEMENTATION OF GOOD HOUSEKEEPING AND BMPs

The goal of the Municipal PP/GH program is to prevent and/or reduce pollutant runoff from city facilities and field operation activities. Based on information developed by the NCTCOG the Center for Watershed Protection, the City's PP/GH program will encompass two stages: the Municipal Facilities Program and the Municipal Operations and Maintenance Program.

#### **Municipal Facilities Program (MFP)**

The purpose of the MFP is to identify those facilities that have the potential to impact the MS4. The goal is to identify possible stormwater pollutants and evaluate the pollutant discharge potential of each facility. Stormwater staff will conduct initial site assessments of all city-owned buildings. Stormwater staff will coordinate with the management staff at each facility in order to efficiently evaluate all buildings. The following baseline information will be gathered during the initial site assessments: (1) name; (2) address, (3) facility type; (4) facility management staff and operating department; (5) GPS location; (6) watershed and/or stormwater receiving waterbody; (7) inventory of existing stormwater infrastructure facilities; (8) inventory of BMP practices and current SOPs; and (9) high priority status.

High Priority facilities (those that have a higher potential to discharge pollutants to the MS4) will be identified by the following criteria: (1) facility involves vehicle maintenance and fueling; (2) facility

stores fuel, hazardous chemicals, or other urban pollutants (e.g. sediment, sand, etc.); (3) facility stores vehicles or equipment; (4) facility is in close proximity to a major watercourse or a current 303d listed impaired waterway; and (5) drainage and maintenance activities occur at the site.

After initial site assessments are complete, site specific BMPs will be developed for each identified High Priority facility. A map of each High Priority facility will be created indicating: (1) facility boundaries; (2) municipal storm drainage infrastructure; (3) permanent stormwater BMP facilities; (4) elevation contours and direction of drainage; (5) chemical and/or material storage areas; (6) vehicle storage and/or fueling areas, maintenance areas, and/or cleaning facilities; and (7) equipment storage and/or fueling areas; maintenance areas, and/or cleaning facilities.

Finally, a site inspection program for High Priority facilities will be implemented including a facility operations training program for facility staff.

For those facilities that are not delineated as High Priority, current SOPs will be updated as needed to reflect BMPs that are most effective in minimizing pollutant discharges.

### **Municipal Operations and Maintenance Program (MOMP)**

The MOMP seeks to identify municipal activities which have the potential to discharge pollutants into the City's MS4 and create BMPs specific to these activities. Stormwater Staff in conjunction with individual field managers and supervisors will identify possible pollutants from operations and maintenance activities and create BMPs in order to prevent and/or reducing discharges to the MS4. The MOMP will target the following municipal operations:

1. Street, Road, and/or Highway maintenance
2. Street Sweeping Activities
3. Stormwater Conveyance System Maintenance
4. Bridge Repair
5. Parks and Recreation Green Spaces Maintenance
6. Water Utilities' Sewer and Water Line Maintenance
7. New Construction and Land Disturbances
8. Vehicle and Equipment Maintenance and Storage Areas
9. Hazardous Material Spill Mitigation and Waste Disposal

Additional areas may be added as necessary over time.

The Best Management Practices (BMPs) associated with each of these operations is outlined in Appendix A.

### **REDUCTION OF DISCHARGE OF POLLUTANTS**

Discharge of pollutants from road repair disturbing an area of one acre or greater or from a common plan of development that is an acre or greater, are controlled through BMPs established as part of the required TPDES Construction General Permit process (TXR150000).

Street maintenance practices and street sweeping activities are described in Section 1 (MS4 Maintenance Activities) above.

### **TRAINING FOR MUNICIPAL EMPLOYEES**

The City conducts employee training to raise employees' awareness of stormwater issues and to promote pollution prevention practices to reduce discharges to the MS4. Education information is disseminated to City employees through electronic announcements, internet websites, posted materials in work areas, new

employee orientation, and stormwater education presentations. Topics include illicit discharges, floatables and litter, and other stormwater related topics.

Training ranges from basic pollution prevention to specific departmental/work area stormwater issues. Basic training is available to all city personnel on an as needed/requested basis. Those departments identified as requiring more specialized stormwater training regarding pollution prevention, spill prevention, appropriate construction site management, etc. are scheduled throughout the year.

### **Waste Handling**

The City is committed to preventing waste materials from entering the MS4 and ensures proper disposal of waste that is removed from the MS4 or from other municipal operations.

*“The permittees shall ensure proper disposal of waste that is removed from the MS4 or from other municipal operations.” (TPDES Permit, Part III, Section 2.d.ii.)*

The City maintains a contract for recycling and proper disposal of used oil and other fluids collected as a result of equipment maintenance and fleet activities. Contracts are also held with waste disposal and/or recycling contractors for the collection and proper disposal of wastes including but not limited to hazardous, non-hazardous, special, and solid wastes; a variety of lights, lamps, ballasts including high pressure sodium HID lamps, incandescent bulbs, fluorescent lamps and tubes, multi vapor lamps, metal halide HID lamps, and electronic light ballasts that do not contain PCBs. Contracts are also held to properly dispose of e-wastes, HVAC refrigerants, and biohazardous materials.

HVAC refrigerants and non-functioning lights are stored by the Public Works and Transportation Department. Refrigerants are stored in DOT approved cylinders and lights are piled until contractors and recyclers are called to remove the materials. None of these materials are exposed to stormwater. Removal of these wastes typically occurs on a quarterly schedule.

Additionally, the City maintains a hazardous materials dumpster (housed at the Public Works South Field Operations location) as a collection point for hazardous materials spills resulting from automobile accidents or other incidents requiring clean-up of liquids such as motor oil, antifreeze, transmission fluid, hydraulic oil, gasoline, or diesel fuel. The City’s contracted wrecker service notifies the Stormwater Utility Crew when they are ready to deliver a new load to the dumpster. The bagged and tagged material is loaded into the dumpster, and type and quantity are logged on a paper form.

### **Pesticide, Herbicide, and Fertilizer Application**

*“The permittees shall implement controls to reduce the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers, by the permittees’ employees or contractors, to public right-of-ways, parks, or other municipal property.” (TPDES Permit, Part III, Section 2.d.iii.)*

Pesticides, herbicides, and fertilizers (PHF) can have a negative impact on the environment when improperly used, including over-application, or applications made under conditions that can cause direct or indirect

discharge to the MS4. In addition, the TCEQ has implemented TPDES General Permit #870000, concerning the discharge of biological pesticides, and chemical pesticides that leave a residue in water. The permit applies to pesticide and herbicide applicators that apply pesticides and herbicides to water bodies, and requires an Integrated Pest Management Plan, tracking of applicators 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 PHFs. The program is outlined below.

#### **MUNICIPAL USES MANAGEMENT PROGRAM**

The Parks and Recreation Department applies the majority of the chemicals for the City of Arlington. The department maintains a staff of licensed applicators to treat parkland and other City grounds as needed, including weed control in rights-of-ways and medians. These applicators ensure full compliance with federal and state regulations when applying chemicals to public lands.

The City of Arlington Parks and Recreation Department follows an Integrated Pest Management (IPM) program with a “least toxic alternative” approach to pesticides. The IPM philosophy uses a coordinated strategy to identify when and where pest suppression treatment is needed, and what strategy and mix of measures should be used that are effective, but also low in cost and environmentally sound. IPM measures include structural, cultural, biological and chemical control in combinations which offer efficient and safe means of keeping pests at tolerable levels.

The following departments have limited uses of pesticides, herbicides, and fertilizers for targeted needs such as controlling vegetation growing in pavement joints at the airport and treating for mosquitoes: Public Works, Community Services, Fire, Water Utilities, and Facility Services. Applications by these departments are accomplished through a combination of their own staff, Parks and Recreation Department’s staff, and contractors. All federal and state regulations are followed and licensed applicators are used as required.

#### **PESTICIDE APPLICATOR PROGRAM**

Applicators for restricted-use and state-limited-use pesticides for agricultural related categories are licensed by the Texas Department of Agriculture (TDA). The Texas Department of Health (TDH) certifies municipal applicators for health related vector control. Certification and re-certification are provided by the Texas Agricultural Extension Service (TAEX); by means of continuing education for the TDA, the primary state agency responsible for pesticide regulation in Texas. Current U. S. Environmental Protection Agency (EPA) regulations include provisions for the control of the use of pesticides through the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). This program outlines the minimum requirements regarding the registration, labeling, and uses of pesticides. Restricted-use pesticides warrant special labeling because they present a potential of harm to human health and the environment.

Categories in which examinations are to be given for licenses include:

- Termite Control
- Pest Control
- Lawn and Ornamental
- Commodity Fumigation
- Weed Control
- Wood Preservation

The Parks and Recreation Department has applicators that are licensed under the Structural Pest Control Board (SPCB) Non-Commercial program under the Lawn and Ornamental, and Weed Control categories. The department also has applicators licensed under TDA Non-Commercial program for Ornamental Plant and Turf Control, Plant Pest and Weed Control, Greenhouse Pest Control, Right-of-Way Pest Control, Aquatic Plant and Animal Pest Control. The application of pesticides and herbicides on City of Arlington parks and golf courses is conducted by licensed applicators. The City financially supports the re-certification requirements of its licensed applicators.

### INTEGRATED PEST MANAGEMENT

An Integrated Pest Management (IPM) program is in place for the City of Arlington's parks and golf courses. IPM is a holistic approach to facility maintenance that focuses on identifying pests and pest activity before they reach critical levels as well as all other aspects of maintenance. IPM does not preclude the use of pesticides, but emphasizes the importance of utilizing adapted plant species, understanding environmental conditions, following recommended cultural practices, monitoring pest populations and using the most effective solutions to combat problems. These solutions, which include cultural, biological, and chemical methods, are designed to balance environmental concerns with plant management. Select employees are responsible for monitoring and reporting any potential pest activity, recording vital information such as location, weather conditions, changes in turf appearance, and symptoms. Through early detection of pest activity, cultural practices can be implemented as the first means of reducing pest activity and often the need for chemical control is avoided. As part of the management strategy, nest boxes and bat houses have been erected at the golf courses and various parks to entice insect-eating birds and bats to park properties.

While chemicals continue to be used on an as needed basis, an approved list of chemicals is maintained based on environmental impact and cost effectiveness. In addition, a "just in time" chemical inventory process ensures that chemicals are purchased in quantities for a single application. This eliminates the unnecessary storage of chemicals, thus reducing potential risks for accidental spills.

The City ensures compliance with established use guidelines of pesticides with licensed and trained applicators. These applicators apply appropriate rates and use of pesticides according to labels and comply with regulations governing the legal disposal of used containers. Materials are properly stored under cover and protected from stormwater. Licensed applicators consider the climatological conditions such as wind and rain for proper timing of applications. Also, preventative maintenance programs are conducted to ensure that spray equipment properly dispenses accurate applications and to reduce the possibility of leakage from tanks, hoses or nozzles. Watersheds are monitored to ensure that chemical containers or other hazardous substances which may threaten water quality are properly disposed.

The most frequently used control of unwanted vegetation in the City of Arlington's park system is organic mulches to cover bare soil in ground cover, annual, and shrub beds. Mulches reduce erosion, increase infiltration of rain and irrigation water and reduce irrigation requirements. The organic breakdown of mulches enhances the effectiveness of pesticides, herbicides, and fertilizers. Local tree services also add their tree chips to stockpiles in the various parks for mulching.

Following the IPM philosophy, City personnel conduct soil tests to diagnose soil conditions before fertilizer applications are administered, and before shrubs are planted in the City parks. The City follows proper mowing cycles that reduce the amount of grass clippings of turf for biodegradation. This reuse of plant material provides nutrients which reduces the amount of fertilizer required. The golf courses and parks use organic and slow release fertilizers to minimize runoff potential. Nutrient experimentation continues with

various natural products such as compost, corn gluten, sea kelp and molasses to find the most effective products to use throughout the park system.

### List of Municipal Facilities

*“The SWMP must include, if applicable, a list of municipal operations subject to the municipal operation, maintenance, and training programs listed under this MCM and all municipally owned and operated industrial activities subject to TPDES or NPDES industrial stormwater regulations.” (TPDES Permit, Part III, Section B.2.d.iv.)*

The City of Arlington’s Public Works and Transportation Department’s Facility Management Division maintains a list of all city-owned buildings. This list serves as a basis for the MFP and MOMP. A copy of the current list is available by contacting the Stormwater Management Division of Public Works and Transportation.

City-owned industrial facilities (Municipal Landfill and Municipal Airport) are included on the Industrial Facility Inspection list maintained by Stormwater Management, Environmental Compliance Group.

## V. Industrial and High Risk Runoff

The City addresses industrial facility stormwater discharges to the MS4 through a comprehensive industrial program that includes regular screening, monitoring, and inspections. The industrial facilities are identified through a variety of methods and include facilities that are permitted under the TPDES Multi-Sector General Permit (MSGP) #TXR050000 or are operating under a Notice of Intent (NOI), facilities that are operating under a No Exposure Certification (NEC), and facilities that are identified through screening and need to be permitted. Although these facilities are governed by the monitoring, reporting, and inspection requirements of their own individual or general TPDES stormwater permits, stormwater leaving these sites may ultimately reach the City of Arlington's storm sewer system. Therefore, the quality of stormwater which reaches the MS4 must also be in compliance with the City's TPDES MS4 permit.

*"If applicable, the permittees shall continue to improve their 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; 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 permittees determine are contributing a substantial pollutant loadings to the MS4.*

*This MCM must include:*

- A. Priorities and procedures for inspections and for establishing and implementing control measures for such discharges; and*
- B. An Industrial and High Risk Monitoring Program as described in Part III, Section B.h.iii of this permit."*

*(TPDES Permit, Part III, Section 2.e.i; TPDES Permit, Part III, Section 2.e.ii)*

### Inspections and Control Measures

Environmental Compliance Officers are primarily responsible for inspecting industrial and high risk facilities operating with the potential to discharge pollutants to the MS4. Follow-up inspections are performed as necessary to enforce stormwater permit compliance.

Checklists and inspection forms have been developed by the Stormwater Management Division to ensure consistency and accuracy in inspection reporting and recordkeeping. These forms are reviewed and updated as necessary to ensure permit compliance. An initial inspection at a facility operating under an NOI typically includes a comprehensive inspection of the facility, BMPs, and the facility's SWPPP. If deficiencies and/or discrepancies are noted, the facility may be issued a Notice of violation (NOV) or citation depending on the severity of the violation and/or the facility's prior knowledge of the violation. The facility is then given the opportunity to comply within a time frame designated by the inspector (typically 30 days or less). Follow-up inspections are then conducted to verify that the discrepancies and/or deficiencies noted in the violation or citation have been remedied and that no other new concerns are found.

Industrial facilities that have an NEC for no exposure of their operations to stormwater are inspected to verify that site conditions warrant the no-exposure waiver.

The inspection schedule for all industrial facilities in Arlington is as follows:

Facility Type	Minimum Inspection Frequency
Municipal Landfills	Annual (with more frequent follow-up as necessary)
Facilities Operating with an TPDES MSGP Permit (NOI)	Annual (with more frequent follow-up as necessary)
Facilities with No Exposure Certification (NEC)	Every two years (with more frequent follow-up as necessary)
Non-Compliant Facilities, or sites with benchmark exceedances	Quarterly (with additional follow-up and/or sampling until the site is in compliance).
High Risk Facilities subject to EPCRA Title III, Section 313; SARA 313 facilities	Annual (with more frequent follow-up as necessary)

TABLE 3: CITY OF ARLINGTON INDUSTRIAL INSPECTION SCHEDULE

Unscheduled inspections occur if an industry is unresponsive or an illicit discharge is reported or suspected.

Those facilities that are required by their TPDES industrial stormwater permit to conduct benchmark monitoring are required to submit the results of such tests to the City of Arlington for review. Any facility that is not regulated by a TPDES or NPDES permit but is determined to contribute a substantial pollutant load to the MS4 may also be required to conduct inspections, monitor discharges, install BMPs, or establish a stormwater pollution prevention plan as determined necessary by the Asst. Director of Public Works – Stormwater Division. **Note:** Per the City's MS4 permit, the city may waive monitoring requirements for facilities they determine are in compliance with the TPDES Multi-Sector General Permit No. TXR050000 (see the COA MS4 permit, Part III, Section 2.h.iii.E).

Inspection results are reviewed by Environmental Compliance and Stormwater personnel who will determine if corrective and enforcement actions are needed. If the City is unable to bring the facility into compliance after following the procedures outlined above, the Stormwater Management Division will inform the TCEQ Region 4 investigation team and/or the EPA Region 6 Enforcement Division to further encourage compliance.

**OTHER DEPARTMENTS**

The Water Resources Division of the COA Water Utilities Department inspects industrial facilities that discharge to the sanitary sewer. The inspection checklist includes items related to stormwater discharges. Any problems or deficiencies related to stormwater are reported to the Environmental Compliance Division of Stormwater Management.

The Fire Department also conducts routine, recurring investigations relative to the proper storage, use, dispensing, mixing, and handling of flammable and combustible liquids and other hazardous materials. Any situation where potential stormwater pollution exists is reported to the Environmental Compliance Division of Stormwater Management.

Code Compliance Services may also respond to complaints about activities at industrial and commercial facilities. Any issues related to stormwater pollution are reported to the Environmental Compliance Division of Stormwater Management.

### IDENTIFICATION OF FACILITIES

An industrial inventory is maintained electronically by the Stormwater Management Division. The inventory is updated with electronic data from the TCEQ's Central Registry list of industrial facilities that have filed a Notice of Intent or Certificate of No Exposure; the EPA Toxic Release Inventory, and the City of Arlington's Community Development and Planning Departments list of occupancy certificates.

### HAZARDOUS WASTE TREATMENT, STORAGE, DISPOSAL, AND RECOVERY FACILITIES

The City of Arlington is unaware of any permitted hazardous waste treatment, storage, disposal, or recovery facilities operating within the city limits. The City has not received any NOIs from facilities identifying their facility as such. Therefore, the City of Arlington is not proposing the implementation of any management programs to monitor and control pollutants in stormwater discharges from hazardous waste facilities. If and/or when a facility begins operation in Arlington, or the City becomes aware of an existing operation, the City will begin annual inspections of the facility and will develop an appropriate management program.

### MUNICIPAL LANDFILL

One municipal landfill is located within the Arlington City limits. The landfill is owned by the City and operated by Republic Services, LTD. This facility does not discharge stormwater to storm sewers, but has controlled discharges of stormwater to Hurricane Creek, a tributary of the West Fork Trinity River, Segment 841. Thus, stormwater quality must be in compliance with the TPDES Multi-Sector General Permit (MSGP) and RCRA Subtitle D requirements.

Republic Services will maintain and amend, as needed, the SWPPP for the Arlington Landfill for compliance with the TPDES MSGP for stormwater discharges associated with industrial activities. The City of Arlington will continue to use the SWPPP developed for the Arlington Landfill as an active management plan for the facility.

The municipal landfill is inspected for compliance with the TPDES MSGP on an annual basis.

### Industrial and High Risk Monitoring Program

- A. *"If applicable, this program must include monitoring for pollutants in stormwater discharges to the MS4 from Type 1 facilities and Type 2 facilities..."*
- B. *For Type 1 facilities, this program must include the collection of quantitative data on those parameters which have been identified by the permittees as a pollutant of concern for that facility, and shall: (1) Coincide with the corresponding industrial sector-specific requirements of the TPDES Multi-Sector General Permit, No. TXR 050000, or any applicable generable permit issued after September 29, 1995, and is not contingent on whether a particular facility is actually covered by the general permit; (2) Coincide with the monitoring requirements of any individual permit for stormwater discharges from that facility; or (3) Include pollutants of concern from stormwater discharge from that facility as identified by the permittees.*
- C. *For Type 2 facilities, appropriate monitoring must be conducted as determined by the permittees to be necessary. This monitoring may include, analytical monitoring, visual monitoring, or other appropriate monitoring method." (TPDES Permit, Part III, Section 2.h.iii.)*

Details regarding requirements for Industrial and High Risk Monitoring are contained in Section VIII of this document (Monitoring, Evaluation, and Reporting).

## VI. Construction Site Stormwater Runoff

The City of Arlington enforces compliance with the TPDES General Construction Permit number TXR150000 for construction sites that disturb one acre or more of land. Stormwater runoff from construction sites is addressed by implementing effective controls per site-specific SWPPPs, construction site inspections, and notifying construction applicants of the pertinent requirements that affect projects under the TPDES permit regulations.

*“The permittees shall continue to implement a program to reduce the discharge of pollutants into the MS4 from construction sites. This MCM must include an ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State or local law. Within one year of date of permit issuance, the permittees shall ensure that the existing program is revised as necessary to address construction projects that result in a land disturbance of one acre or more, including activities disturbing less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more. This MCM must include:*

- A. requirements to implement appropriate erosion and sediment control BMPs to reduce pollutants discharged to the MS4 from construction sites;*
- 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 at a construction site;*
- C. inspection of construction sites and enforcement of control measure requirements;*
- D. appropriate education and training measures for construction site operators; and*
- E. notification to construction site operators of their potential responsibilities under the NPDES or TPDES permitting regulations and permits for construction site runoff.*
- F. Procedures for site plan review which incorporate consideration of potential water quality impacts; and*
- G. procedures for receiving and considering input received from the public.*

*(TPDES Permit, Section III, Part 2.f.i.)*

The City has an established Construction Site Stormwater Runoff program designed to reduce the discharge of pollutants into the MS4 from construction sites that are one or more acres in size or that are part of a larger common plan of development. The program also addresses sites that are less than one acre in size, in response to citizen requests or complaints concerning those particular sites. All construction sites are inspected by Environmental Compliance staff a minimum of twice per month – one visual inspection and one comprehensive inspection. Additional inspections are conducted as necessary, e.g. if deficiencies are found or in response to complaints received by Environmental Compliance.

### Requirements to Implement Proper BMPs

The City currently requires SWPPPs for all construction permit applications that disturb one acre or greater or that are part of a common plan of development. The City reviews and maintains a copy of the SWPPP to identify the erosion and sediment controls for reducing discharge of pollutants from the individual construction sites.

Additionally, all construction activities operated within the City of Arlington are governed by the Stormwater Pollution Control Ordinance which requires that the erosion and sediment control measures identified in the operator's SWPPP be observed to ensure correct operation and that entry and exit to the site be inspected for evidence of off-site sediment tracking. (See COA SWPCO, Article IV, Section 4.04(N).)

### **Requirements for Construction Site Operators to Address the Control of Site Waste**

All sites that disturb one acre or greater are required to implement appropriate controls to reduce sediment and other pollutants from being discharged from the construction site to the MS4. In addition, appropriate pollution prevention and good housekeeping measures to address litter, waste materials, concrete truck washouts, chemicals, and sanitary waste are also required for every site, regardless of size.

### **Inspection of Construction Sites and Enforcement**

Construction inspections focus on achieving site compliance through effective site stormwater management, and erosion and sediment control. Inspections are completed by Environmental Compliance Officers who verify that the structural and non-structural control measures outlined in the operator's SWPPP are accurately reflection on the site and are functioning as intended to prevent pollution from the site. Environmental Compliance Officers conduct inspections a minimum of twice per month, with inspections occurring more often when corrective actions are required. Environmental Compliance Officers maintain records of site conditions observed during inspection and record all violations.

The City maintains legal authority to inspect construction sites, require site compliance, and provide enforcement of non-compliance via Education, Notices of Violation (NOVs), Criminal and Civil Citations, and Stop Work Orders (SWOs).

### **Appropriate Education and Training Measures for Construction Site Operators**

The City's SWPCO as well as the TPDES General Construction Permit make it clear that discharges to the MS4 are not allowed. Education and training activities are performed for COA personnel that oversee and/or inspect construction projects for the City. Personnel are trained on the general requirements of the TPDES construction General Permit and general stormwater management practices.

Moreover, the City of Arlington participated with other local municipalities (Dallas, Fort Worth, Irving, Garland, Mesquite, and Plano) in assist the NCTCOG in designing an NPDES Construction Inspection Training Program. The final program consists of a one (1) day workshop. All aspects of the TPDES program are stressed including SWPPP development, BMP selection, site inspections, and NOI/NOT filing. The course is designed for use by municipal inspectors, site owners and/or operators, and general construction site personnel. The NCTCOG offers this course regularly.

### **Notification of Construction Site Operators of their Responsibilities**

Notification to construction site operators performing work for the City of Arlington is provided through pre-development meetings and pre-construction conferences as well as the City of Arlington's Design Criteria Manual that requires all public and private construction operators to reduce discharge of pollutants from construction sites via compliance with the TPDES Construction General Permit.

### **Procedures for Site Plan Review (Water Quality Impacts)**

Construction site plans are reviewed through the development process for conformance with the City of Arlington's Design Criteria Manual. SWPPPs are evaluated by the Community Development and Planning Department. The City's reviewing engineer meets on an individual basis with developers, consulting engineers,

and contractors to discuss permit and ordinance requirements for construction sites. The meetings include a discussion of adopting development and construction methods that have the least impact on stormwater quality. Review checklists have been developed by the City and are used to educate the development community about SWPPP requirements.

### **Procedures for Receiving and Considering Input from the Public**

The City of Arlington has established a number of avenues to receive information submitted by the public concerning the conditions and activities conducted at construction sites located within the city limits including: The COA Action Center; The COA Citizen's Action Request; The Stormwater Management website; Stormwater Education; and direct dial to the Public Works and Transportation receptionist.

COA Action Center is used to communicate all complaints, compliments, comments, and suggestions for improving quality of life in the City of Arlington. Residents can call 817-459-6777 to speak with someone about their concerns.

COA Citizen's Action Request is the online system residents may use to communicate any issues within the city including stormwater related issues. These online stormwater requests, once submitted are forwarded to the Environmental Compliance Section of Stormwater Management. Environmental Compliance officers respond within 3 business days to the complaint. A return phone call or email is sent to the citizen to report findings and actions taken.

The Stormwater Management website contains a section devoted to information for construction site operators. It contains comprehensive information that describes the TPDES permit process, inspections, tools for successful completion of the permit, and inspection processes, and links to the TCEQ and other appropriate web sites for forms and other related content. Questions regarding stormwater compliance can be emailed to the Stormwater Division through the website.

The Stormwater Educator presents programs and updates about stormwater topics to churches, associations, schools, and other groups. Residents have an opportunity to speak with the educator about concerns with stormwater in their neighborhood or throughout the City.

The Public Works & Transportation receptionist is available to speak to residents about their stormwater concerns. Any questions that cannot be answered by the receptionist are forwarded to the Environmental Compliance Division.

### **Publicly Owned Construction**

The City of Arlington's construction projects comply with the TPDES General Permit for Construction sites that are one acre or greater. City owned projects include public works projects such as roadway and water line construction and other construction in which the City is actively involved as owner or operator.

Many public works projects are designed under contract to private consultants. Public Works, Engineering Operations staff are involved in the bidding and monitoring of the construction contract in addition to typical construction inspections. Staff engineers review these designs and construction documents prior to their acceptance. In-house designs receive internal review and approval prior to bidding. The documentation includes the SWPPP or the requirement for the successful bidder to produce one as a part of his contract. The SWPPP, under both circumstances, will undergo review and approval prior to implementation.

The City typically includes preparation of the SWPPP and installation of BMPs as part of the bid process based on the precept that the contractor best knows equipment scheduling requirements, manpower availability, and the most effective way to construct the project based on traffic control plans submitted to the City for final approval. The City of Arlington is listed a co-permittee on the Notice of Intent when a TPDES permit is required.

Each public project is assigned to a Public Works Inspector to ensure that the project is constructed according to the plans and specifications received by the Engineering Operations Division. This includes the implementation of the SWPPP. Proper functioning of BMPs is monitored and adjustments are required of the contractor when necessary. Environmental Compliance staff is available for consultation relative to erosion control and will periodically visit public works sites to confirm effective implementation of the SWPPP.

### List of Sites

*“The permittees shall maintain a current list of construction sites that discharge directly to the MS4 and that have been issued an NPDES or TPDES permit. The list must include the name, location, and permit number of the discharges that have been authorized under an NPDES or TPDES stormwater discharges permit for construction activities (if known).” (TPDES Permit, Section III, Part 2.f.ii.)*

A comprehensive list of the active NPDES/TPDES construction sites is maintained by the Environmental Compliance Section of Stormwater Management. The City currently uses Field ID Software to document construction activity. The name and location of the construction site as well as inspection and violation information for each site is maintained in Field ID. Because NOIs and NOTs are submitted frequently, the actual number of active construction sites varies. Therefore, a current list of sites is not included in this SWMP. However, a copy of the current list is available upon request to the Assistant Director of Public Works – Stormwater Division.

## VII. Public Education, Outreach, Involvement, and Participation

The City of Arlington’s public education, outreach, involvement, and participation program encourages stewardship of the City’s surface water resources by raising awareness of the issues, providing information on best management practices that may be used to improve water quality, and providing opportunities for the public to provide meaningful input into the program.

*“Within one year from the date of permit issuance, the permittees shall document and ensure that the SWMP promotes, publicizes, and facilitates public education and outreach, if applicable, to: residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel and provide justification for any group that is not addressed by the program. The permittees must document the activities conducted and materials used to fulfill this program element and provide enough detail to demonstrate the amount of educational and outreach resources and materials used to address each group.”*  
*(TPDES Permit, Section III, Part 2.g.i.A)*

### Public Education and Outreach – Education Programs

The City’s education and outreach program promotes, publicizes, and facilitates public reporting of spills, fish kills, illicit discharges, and improper disposal of materials, and the management and disposal of HHW. The program also focuses on the proper use, application, and disposal of pesticides, fertilizers, and herbicides, pet waste management, and yard waste management. It also encourages citizens to report blocked or broken storm drain pipes and other infrastructure to prevent flooding. The program is targeted to various audiences including children, residents, businesses, non-governmental entities, commercial and industrial facility operators/owners, and city staff.

The City’s Environmental Education Specialist (Stormwater Educator) coordinates the compilation of outreach projects throughout the year, including quantities of literature and promotional items distributed, records of media contacts (traditional and social) and publication of literature, public speaking engagements, and events and meetings attended.

The Stormwater Educator is also responsible for all stormwater education and outreach efforts throughout the city. The public education program consists of four primary areas: **Classroom Program, Community Program, Media Program, and In-House Program.**

#### CLASSROOM PROGRAM

The City’s Stormwater Management Division partners with both public and private schools within the city limits to provide stormwater education to students. Because students have the potential to impact stormwater and water quality in the MS4, and can also positively impact their families’ outlook, the city promotes water quality education that focuses on watershed concepts, stormwater pollution prevention, flood safety and awareness, and the stormwater infrastructure system.

#### COMMUNITY PROGRAM

The Stormwater Management Division provides education and community outreach through traditional and social media, websites, and in-person presentations to community groups (e.g. churches, home owners associations, apartment complexes, and civic groups), including participation at public events. Topics include pollution prevention, flood safety and awareness, illicit discharges, improper disposal, pet waste, yard waste,

pesticides, herbicides, and fertilizers, HHW, and other water quality related issues. The Stormwater Educator collaborates with Water Resource Services, Solid Waste and Recycling, and Community Development and Planning to disseminate information to the community.

**MEDIA PROGRAM**

The Stormwater Management Division uses both traditional and social media to provide timely and relevant information to the community. Stormwater Management uses a variety of print and electronic media to disseminate information. Media are developed to support the various technical and educational campaigns and are regularly updated to address current issues within the program.

**IN-HOUSE PROGRAM**

The Stormwater Management Division conducts in-house education to raise city employees’ awareness of stormwater issues and to promote pollution prevention practices to reduce discharge of pollutants into stormwater.

The Stormwater Educator conducts employee training and education to raise employees’ awareness of stormwater issues and to promote pollution prevention practices to reduce discharges to the MS4. Education information is disseminated to City employees through electronic announcements, internet websites, new employee orientation, and PP/GH education presentations. Topics include illicit discharges, floatables and litter, pollution prevention, flood safety, and other stormwater related topics.

**Public Education and Outreach – Reporting Disposal, Proper Use**

The public education program also promotes, publicizes, and facilitates the public reporting of illicit discharges; the proper management and disposal of used oil and HHW, and the proper use, application and disposal of PHF.

*“The permittees shall 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; and*
- 3. The proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors.*

*(TPDES Permit, Section III, Part 2.g.i.B)*

**PUBLIC REPORTING OF ILLICIT DISCHARGES OR IMPROPER DISPOSAL OF MATERIALS INTO THE MS4**

The reporting of illicit discharges and improper disposal of materials, including floatables, is promoted through the Stormwater Education Program as coordinated by the Stormwater Educator. Proper reporting is promoted via print advertisements (newspaper and water bill inserts); social media, and the Stormwater Management website. Proper reporting is also promoted via the four stormwater education programs outlined above. Citizens are encouraged to report illicit discharges to the Action Center, through the Online Citizen Request Form, or directly to the Public Works and Transportation Receptionist.

### PROPER MANAGEMENT AND DISPOSAL OF USED OIL AND HAZARDOUS HOUSEHOLD WASTE

The Solid Waste and Stormwater Management Divisions of Public Works and Transportation work together to ensure citizens receive information about reusing and recycling materials and their proper disposal, including used oil and hazardous household waste.

The Recycling Coordinator is primarily responsible for publicizing and coordinating recycling activities throughout the city including the HHW collection program and public education regarding used oils and other hazardous materials. Information is disseminated to the citizens through a multifaceted campaign that includes distribution of pamphlets and water bill inserts. Information is also available to the public through the Recycling website, traditional print media, social media, and through presentations to community organizations, group activities, and school meetings. These programs encourage citizens to contact the Action Center or local offices with questions or reports of illicit activities involving spills, illegal dumping, discharges to the City's MS4, and used oil disposal. The educational material directs citizens to the Environmental Collection Center in Fort Worth or Arlington's Mobile Collection Unit for proper disposal of used oil and toxics.

While the goal of the Recycling education program is to reduce the volume of material sent to the landfill, the Stormwater Management Division works closely with the Recycling Coordinator to ensure that educational materials developed include information about recycling automotive fluids, proper disposal of toxics, and the connection between these activities and surface water quality.

### PROPER USE, APPLICATION, AND DISPOSAL OF PESTICIDES, HERBICIDES, AND FERTILIZERS

Low maintenance native and adapted vegetation provides homeowners and businesses with a unique opportunity to conserve water and reduce pesticide and herbicide usage. The Stormwater Educator presents programs and updates about water quality topics to several community groups; home and landscape pollution topics and tips are frequently promoted to these groups. Residents may also find information on the proper use and disposal of pesticides, herbicides, and fertilizers on the Stormwater Management website. Links to Texas Smartscape™, Texas Agrilife, and other such websites offer additional information, education, and advice on lawn care.

Additionally, through the NCTCOG Regional Stormwater Coordinating Council, the City of Arlington participated in development of the Texas SmartScape™ CD and website. The purpose of Texas SmartScape™ is to educate citizens on the proper use of plant materials, mulches, and irrigation to provide a low-maintenance landscape that is pest and disease-free; helps conserve water, and helps reduce stormwater pollution. The City of Arlington WUD is responsible for the implementation of the SmartScape™ program. The COA Stormwater Management Division assists with program promotion via the Stormwater Management website. Links to the COA WUD and Texas SmartScape™ websites are available on the City of Arlington, Stormwater Management webpage.

### Public Involvement and Participation

The City engages the community in stormwater related activities to encourage the protection and enhancement of stormwater quality. Similar to the education and outreach program, the public involvement and participation program includes opportunities for a wide variety of people who live in Arlington to participate in SWMP development and implementation.

*“Within one year from the date of permit issuance, the permittees shall develop and implement a public involvement and participation program which complies with State, Tribal, and local public notice requirements. This program element must include opportunities for a wide variety of constituents within the MS4 area to participate in the SWMP development and implementation.”  
(TPDES Permit, Part III, Section 2.g.ii.)*

Public Involvement and Participation is conducted by providing **volunteer opportunities** and by **soliciting input and feedback to the SWMP** during the update and revision process.

#### **VOLUNTEER OPPORTUNITIES**

The City continues to facilitate volunteer participation in Creek and Lake Clean-Ups and Storm Drain Marking events. These activities promote watershed stewardship and pollution prevention.

Citizens may also volunteer to become members of the several City of Arlington Boards and Commissions for direct involvement in the policy process.

#### **SWMP DEVELOPMENT AND PUBLIC INVOLVEMENT**

The SWMP is available for review at the City of Arlington, Public Works and Transportation Department. Citizens may review the current copy of the SWMP at any time during normal business hours. Questions or comments regarding the SWMP may be directed to the Assistant Director of Public Works – Stormwater Division.

The SWMP is also available online on the Stormwater Management website. Citizens may view the SWMP at any time. Questions or comments regarding the SWMP may be directed to the Assistant Director of Public Works – Stormwater Division.

The Stormwater Management Division will solicit input from the public to be used to develop future SWMP during periods of annual update and revision. The City complies with all applicable State, Tribal, and local public notice requirements.

## VIII. Monitoring, Evaluation, and Reporting

The City of Arlington maintains a comprehensive monitoring program to protect water quality of receiving waters within the MS4 and comply with permit requirements. The City of Arlington has elected to perform the required storm event discharge monitoring under Section IV, Section A.1: NCTCOG Regional Wet Weather Characterization Program (RWWCP) as supplemented by dry weather monitoring and local monthly grab sampling.

Screening and monitoring efforts include **storm event discharge monitoring (RWWCP), dry weather screening, Inner-City Creek Sampling (Monthly/CRP), and industrial and high risk runoff monitoring.**

### Storm Event Discharge Monitoring (RWWCP / Wet Weather Monitoring)

*“The permittees shall identify, investigate, and address areas within their jurisdiction that may be contributing excessive levels of pollutants to the MS4. The wet weather screening program shall:*

- 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 also for follow up screening.”*

*(TPDES Permit, Part III, Section 2.h.ii.)*

*“Beginning upon permit issuance, (unless stated otherwise), the permittees shall implement a Wet Weather characterization sampling program in accordance with Option 1, 2, or 3...”*

- 1. Option 1: Regional Wet Weather characterization Program (RWWCP). The permittees may participate in the Dallas-Fort Worth Area RWWCP, as approved by the TCEQ on February 11, 2011. If this option is selected by the permittees, the RWWCP must be implemented according to the schedule provided in the approved RWWCP. If the program is implemented prior to the permit issuance date, the permittees may use the results of all sampling that is conducted prior to permit issuance to comply with this requirement.*

*(TPDES Permit, Part IV, Section A; A.1).*

The City monitors wet weather events through a wet weather screening program designed to identify and investigate areas that may contribute excessive concentrations of pollutants to the MS4, and to establish baseline data on receiving streams. The City’s wet weather monitoring efforts are coordinated by the NCTCOG through its Regional Wet Weather Characterization Program. Water quality data is collected from NCTCOG quarterly or when published.

### Dry Weather Screening Program

The City’s dry weather screening program focuses on detecting the presence of illicit discharges, eliminating illicit connections, and assessing dry weather water quality changes. Environmental Compliance Officers are responsible for conducting all dry weather screening.

*"This program shall continue efforts to detect the presence of illicit connections and improper discharges to the MS4. All areas of the MS4 must be screened at least once during the permit term. The permittees may utilize modified screening methods based on experience gained during previous field screening activities; the screening methods are not required to conform to the protocol in 40 CFR § 122.26(d)(1)(iv)(D). Sample collection and analysis is not required to conform to the requirements of Part V, Section B.2 of this permit, 'Test Procedures.'"*

Dry weather sampling occurs when there has been no significant precipitation (less than 0.10 inches) within 72 hours to ensure flow is not from rainfall runoff. Tests and observations are made when the flow is first observed and again within 24 hours, but no sooner than four hours to increase the potential to detect illicit flows. Analyses performed (when flow is detected) include water temperature, pH, color, copper, and phenols. Odor, oil sheen, surface scum, and sewage indicators are also observed when flow is detected.

When screening results indicate the possible presence of illicit flow, Environmental Compliance Officers begin a trace back investigation of the pollutants of concern within the MS4. A variety of tools are used to aid in the investigation including but not limited to physical walkthroughs and dye tracing. If a responsible party is found, appropriate enforcement actions are taken.

### **Inner-City Creek Sampling**

The Inner-City Creek Sampling program is separated into two components: **monthly creek sampling and the Clean Rivers Program (CRP)**.

#### **MONTHLY CREEK SAMPLING (PREVIOUSLY WET WEATHER SCREENING PROGRAM)**

Since 1988, the City of Arlington Environmental Compliance staff has, on a monthly basis, conducted sampling activities in its inner-city creek system. Over time, sites have been added, discontinued, or moved in order to provide a representative sampling of inner-city creeks. Currently, the city monitors thirty-two (32) sample sites. Sampling at each of the thirty-two sites includes eleven (11) water quality parameters determined to provide a good indication of the presence of illicit discharges. Parameters include: pH, dissolved oxygen, specific conductivity, air temperature, sample temperature, surfactants, chlorine, copper, phenols, ammonia, and visual observation.

Selection criteria for these sites was based on prior system knowledge, ease of access to the sampling site, and downstream proximity to industrial areas historically demonstrating recurring evidence of illicit discharges to the City's storm sewer system. These areas include motor vehicle retail and maintenance areas, regions of densely populated food service establishments, newer developments to the south and west of town, and industrial parks.

A positive indication of the presence of any of the eleven parameters would trigger an investigation into the source(s) of the positive parameter(s). Methods of analysis for the indicators include visual observation, test kit appraisal in the field, and laboratory analysis.

Upon determination of the exceedance of one or more of the above trigger parameters, Environmental Compliance staff will immediately proceed upstream to determine the source of the pollutant(s) in question.

The methods of detection employed are dependent on the size of the pipeline. Environmental Compliance staff walks up-line as far as feasibly and safely possible, retesting for the detected parameter(s) until the

indication of its presence either disappears or the source becomes obvious. Compliance Officers employ alternative methods of detection at the point where physical inspection becomes either impractical or impossible. Investigators have at their disposal the ability to request TV inspection, and dye and/or smoke testing to further isolate and identify the source(s) of the detected contaminants. Access to facilities suspected of the illicit discharge is ensured through the Stormwater Pollution Control Ordinance. The investigation(s) will continue until the source(s) of the pollution have been identified, whereupon punitive measures may be employed to ensure elimination of the illicit discharge.

#### **CLEAN RIVERS PROGRAM (CRP)**

In addition to monthly inner-city creek sampling, eight (8) of the monthly sites are part of the TCEQ's Clean Rivers Program (CRP). The CRP program is coordinated through the Trinity River Authority of Texas (TRA). The number of CRP sites was recently reduced from twelve (12) sites to eight (8) to avoid duplication of efforts with other cities and to remove those sites that historically had no flow. Sampling at each of the eight CRP sites includes several water quality parameters. Parameters include: pH, dissolved oxygen, specific conductivity, air temperature, sample temperature, surfactants, chlorine, copper, phenols, ammonia, and visual observation. Lab analyses include the following parameters: Cadmium, Chromium, Copper, Manganese, Nickel, Zinc, Iron, Lead, Chlorophyll, TKN, Nitrate, Nitrite, Orthophosphate, Total Phosphate, Hardness, and E.coli.

The eight CRP sites are located on larger bodies of water. This provides a broader view of the health of the entire stormwater collection system as well as indicating the presence of any pollutants from illicit discharges upstream not caught at the monthly site locations.

Seven CRP locations were chosen to monitor indicator bacteria on a monthly basis. These locations have been identified by the TCEQ as impaired waterbodies not suitable for contact recreation due to the high presence of indicator bacteria, and are regulated under TMDL. All current CRP sites are monitored for indicator bacteria once a quarter; however, in order to fully represent stream flow conditions and presence of bacteria, it is imperative that the City monitor these locations on a monthly basis and develop baseline data to accurately determine the health of Arlington's streams.

The discovery of pollution levels attributable to illegal dumping, illicit connections or a substantial nonpoint source will trigger a source search. An investigation will be initiated, and if a source is located, appropriate corrective action will be taken.

#### **Industrial and High Risk Runoff Monitoring Program**

To satisfy this permit requirement, the City of Arlington requires industries with benchmark monitoring requirements under the Multi-Sector General Permit (MSGP) for stormwater discharges related to industrial activity to submit their monitoring results to the City. Each year the City sends notice to all facilities on file with benchmark monitoring requirements to remind them of their reporting requirements to TCEQ and requiring that a copy of the report be sent to the Stormwater Management Division, Environmental Compliance Group. Those who do not submit the benchmark monitoring data to the City will be asked to provide the data upon annual inspection of their facility.

The City also reviews the "No Exposure" certifications provided by the permitted facilities to ensure site conditions warrant the NEC.

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## RECORD KEEPING AND REPORTING

The City of Arlington will keep records and follow reporting procedures in compliance with the City's TPDES MS4 Permit. Recordkeeping and reporting allows the City to evaluate the implementation of the SWMP.

### Recordkeeping

The City will maintain all records, a copy of the TPDES MS4 Permit and associated data for a period of at least three years after the term of the permit. A current, updated copy of the SWMP and a copy of the MS4 permit will be maintained at the Public Works and Transportation Department in City Hall.

The SWMP will be available for viewing during normal business hours, and available supporting documents may be viewed following a written request from the public. In such a case, Texas law regarding the Public Information Act and/or Freedom of Information Act will be followed. Reasonable charges, in accordance with Texas law, may be levied by the City for researching and preparing any requested materials.

### Reporting

#### Annual System-Wide Report

The City of Arlington will prepare and submit a concise annual report to the TCEQ's Wastewater Permitting Section, Stormwater & Pre-Treatment Team and the TCEQ Region 4 Office by the reporting deadline (**March 31<sup>st</sup>**) each year of the permit term. The City will maintain copies of the annual reports at City Hall or in appropriate storage that is easily accessible to authorized TCEQ personnel.

The annual report will address the requirements listed in the City of Arlington's TPDES Phase I MS4 permit. Generally the report will document the stormwater related activities for the previous year, evaluate the success of each BMP relative to their measurable goals, and discuss plans for the upcoming year, including modifications to the SWMP. Modifications may include replacement of previously selected BMPs, alteration of the implementation schedule, or other changes allowed by the permit.

The annual report will be submitted to the following address:

**Texas Commission on Environmental Quality  
Stormwater and Pretreatment Team, MC-148  
PO Box 13087  
Austin, Texas 78711-3087**

#### SWMP Review and Updates

The City is permitted to revise this SWMP during the permit term with the prior written approval of the TCEQ, unless the modification is to add controls or replace a less effective or infeasible BMP with an alternate BMP (TPDES Permit, Part III, Section G). The permit, in the aforementioned part and section, details the requirements and allowances for making modification to the stormwater management program. This can include addition, deletion, or modification of BMPs unless denied in writing from the TCEQ.

A record of modifications to the SWMP will be documented in updated SWMPs. A copy of any communication to TCEQ regarding SWMP modification, as well as written approval from TCEQ of proposed SWMP modifications will also be maintained by the Public Works and Transportation Department, Stormwater Management Division.

## ROLES AND RESPONSIBILITIES OF PERMITTEES

The City of Arlington's Public Works and Transportation Department, Stormwater Management Division is responsible for the overall development of the SWMP, but several of the City's departments have some degree of responsibility in the implementation of the plan.

Co-permittees associated with the City of Arlington's MS4 permit (TXDOT and UTA) are responsible for the development and implementation of their own respective SWMPs to those portions of the MS4 within their jurisdiction.

Stormwater Management plans for TXDOT and UTA are available by contacting each respective agency.

## SUMMARY

The overall strategy of the City for reducing pollutants to the MEP and protecting receiving waters involves the use of an effective Stormwater Management Program. The City's SWMP is developed with the eight required MCMs outlined in its TPDES MS4 permit. Each MCM in the SWMP has selected BMPs, measurable goals, and schedules. The City has developed this SWMP by selecting the BMPs and measurable goals for each MCM that is appropriate for the City while meeting the requirements of its TPDES Permit for Large MS4s. The five year implementation schedule is tailored to prioritize water quality problems and reduce pollutants; build upon existing municipal activities; and to protect significant water resources in the watershed. During the permit term (5 years), the City will evaluate the measurable goals associated with the selected BMPs to determine their effectiveness.

The City of Arlington, Public Works and Transportation Department, Stormwater Management Division will be responsible for the overall compliance of the SWMP and coordinating the implementation of the City's Stormwater Management Program. It will utilize appropriate expertise and assistance from other departments within the City to meet various SWMP requirements.

The COA will adhere to all recordkeeping and reporting guidelines including the annual system-wide report outlined in its permit. The annual report will provide information on the development and implementation of activities conducted by the City. Annual reports will serve as a self-audit for the City, providing evaluation and assessment on the appropriateness and effectiveness of the BMPs implemented.

Copies of the COA Stormwater Management Plan, MS4 Permit, and other supporting documentation can be requested in person or in writing by contacting the Assistant Director of Public Works – Stormwater Division or by visiting the Public Works and Transportation Department located at 101 W. Abram St, City Hall – 2<sup>nd</sup> Floor, Arlington, TX 76010.

## APPENDIX A: MEASUREABLE GOALS

*“Each element of the SWMP must be developed or revised to include measurable goals, whenever feasible.” (TPDES Permit, Section III, Part A.2.)*

Appendix A outlines the measurable goals for each of the eight (8) MCMs described in the SWMP. Each MCM is summarized with a description of the activity, associated BMP, measurable goal(s), implementation schedule, and responsible party/department.

## MCM #1: MS4 Maintenance Activities

Activity	Measureable Goal (Tracked Annually)	Implementation Schedule	Responsible Party / Department
<b>Structural Controls</b>			
1. Annual inspection and cleaning of curb inlets and box culverts.	<ul style="list-style-type: none"> <li>• # of inlets inspected*</li> <li>• # of culverts inspected</li> <li>• Labor and equipment costs</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater Field Operations
2. Annual inspection of City-owned concrete channels and flumes.	<ul style="list-style-type: none"> <li>• Linear feet channels inspected*</li> <li>• Labor and equipment costs</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater Field Operations
3. Clean Concrete and Earthen Channels (as needed)	<ul style="list-style-type: none"> <li>• Labor and equipment costs</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater Field Operations
4. Clean and inspect concrete flumes (as needed)	<ul style="list-style-type: none"> <li>• Labor and equipment costs</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater Field Operations
5. Repairs to drainage structures and drainage pipes	<ul style="list-style-type: none"> <li>• Labor and equipment costs</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater Field Operations
6. Trees, limbs, and brush removed from system	<ul style="list-style-type: none"> <li>• Labor and equipment costs</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater Field Operations
7. Pipe inspections (as requested)	<ul style="list-style-type: none"> <li>• Labor and equipment costs</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater Field Operations
8. New Drainage Construction	<ul style="list-style-type: none"> <li>• Labor and equipment costs</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater Field Operations
<b>Floatables</b>			
1. Continue City of Arlington Automated Recycling Program	<ul style="list-style-type: none"> <li>• Pounds of recycling material collected curbside.</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Solid Waste Division
2. Continue use of the Mobile Litter Unit	<ul style="list-style-type: none"> <li>• # of uses</li> </ul>	Permit Years 1 – 5	Parks and Recreation Department
3. Continue use of Contracted Litter Crew	<ul style="list-style-type: none"> <li>• Litter collected by weight (pounds)</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Solid Waste Division
4. Continue Regional Partnerships with KAB	<ul style="list-style-type: none"> <li>• # of volunteer clean up events sponsored by KAB/year</li> <li>• # of Adopt-a-Spot Locations adopted</li> </ul>	Permit Years 1 – 5 Permit Year 5	Parks & Recreation Department; Keep Arlington Beautiful
<b>Roadways</b>			
<b>STREET SWEEPING</b>			
1. Continue In-house Thoroughfare Sweeping Program	<ul style="list-style-type: none"> <li>• Total gutter miles swept (if available)*</li> <li>• Labor and equipment costs</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater Field Operations
2. Continue Contracted Street	<ul style="list-style-type: none"> <li>• Total gutter miles swept*</li> </ul>	Permit Years 4 – 5	Public Works and Transportation:

\*implemented in Permit Year 4

Sweeping Program			Stormwater Field Operations
<i>DEICING AND/OR SANDING ACTIVITIES</i>			
1. Sweep the streets where deicing materials have been applied to icy patches	<ul style="list-style-type: none"> <li>• # of icy events*</li> <li>• Amount of material deployed*</li> </ul>	Permit Years 4 – 5	Public Works and Transportation: Streets Division

## MCM #2: Post Construction Stormwater Control Measures

Activity	Measureable Goal (Tracked Annually)	Implementation Schedule	Responsible Party / Department
<b>Comprehensive Planning Process</b>			
Adopt and implement Unified Stormwater Ordinance and updated Design Criteria Manual	<ul style="list-style-type: none"> <li>• City Council Adoption of Ordinance and Manual</li> </ul>	Permit Year 5 <i>(implementation in next permit term)</i>	Public Works and Transportation: Stormwater Engineering
Integration of post-construction BMPs into City Projects	<ul style="list-style-type: none"> <li>• Evaluate annual capital improvement program for opportunities to include post-construction stormwater control measures in the proposed projects</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater Engineering
<b>New Development and Redevelopment</b>			
Implement new ordinance and manual requirements for post-construction stormwater control measures	<ul style="list-style-type: none"> <li>• # of sites reviewed</li> <li>• # of sites constructed</li> </ul>	Next Permit Term <i>(w/ adoption of USO)</i>	Community Development and Planning : One-Start Division
<b>Implementation and Maintenance of Structural and Non-Structural BMPs</b>			
Develop program for owner annual inspection forms and City's inspection	<ul style="list-style-type: none"> <li>• Tracking program developed</li> <li>• # of annual inspection forms received</li> <li>• # of sites inspected by the city</li> </ul>	Next Permit Term <i>(w/adoption of USO)</i>	Public Works and Transportation: Stormwater Engineering
<b>Flood Control Projects</b>			
Continue Watershed Studies	<ul style="list-style-type: none"> <li>• # of watershed studies in progress</li> <li>• # of watershed studies complete</li> </ul>	Permit Years 1 - 5	Public Works and Transportation: Stormwater Engineering
Continue to implement Stormwater Capital Improvement program	<ul style="list-style-type: none"> <li>• # of structural flooding issues addressed</li> <li>• # of design projects initiated</li> <li>• # of construction projects initiated</li> <li>• Funds encumbered</li> </ul>	Permit Years 1 - 5	Public Works and Transportation: Stormwater Engineering

## MCM #3: Illicit Discharge Detection and Elimination (IDDE)

Activity	Measurable Goal (Tracked Annually)	Implementation Schedule	Responsible Party / Department
<b>Elimination of Illicit Discharges and Improper Disposal</b>			
1. Continue to correct the discharge, remove the improperly disposed materials within 30 days or as soon as reasonably possible.	<ul style="list-style-type: none"> <li># of illicit discharges and illegal disposal sources identified*</li> </ul>	Permit Year 4	Public Works and Transportation: Stormwater, Environmental Compliance
<b>Overflows and Infiltration</b>			
1. Minimize the number of sanitary sewer releases to the MS4 via inspection, maintenance, and sanitary sewer cleaning.	<ul style="list-style-type: none"> <li># of Manhole &amp; Clean Out Investigations and Repairs</li> <li># of sanitary sewer investigations</li> <li># of SSIs requiring use of TV</li> <li># of Unstop Overflows &amp; Sewers</li> <li># of Sewer backups reported (Dwellings)</li> <li># of sewer main repairs</li> </ul>	Permit Years 1 – 5	Water Utilities Department
<b>Household Hazardous Waste Program (HHW, Yard Waste, and Animal Wastes)</b>			
1. Continue to promote participation in the Environmental Collection Center Program and the Mobile Collection Unit (Crud-Cruiser)	<ul style="list-style-type: none"> <li>Amount of waste collected from COA residents at the ECC and mobile collection events</li> <li>Annual program expenditures</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Solid Waste Division
2. Continue offering leaf collection recycling drop off locations throughout the city.	<ul style="list-style-type: none"> <li># of locations</li> <li>Amount of material collected</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Solid Waste Division
<b>MS4 Screening and Illicit Discharge Inspections</b>			
1. Detect, inspect, and investigate illicit discharges and/or improper disposal	<ul style="list-style-type: none"> <li># of illicit discharges investigated and/or reported</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
2. Facilitate public reporting and response to resident concerns regarding illicit discharges or improper disposal of non-stormwater materials	<ul style="list-style-type: none"> <li># and types of illicit discharge related calls received</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
<b>NPDES/TPDES Permittee List</b>			
1. Maintain an updated list of dischargers to the MS4 with TPDES and or NPDES stormwater	<ul style="list-style-type: none"> <li>Name, location, and TPDES/NPDES permit number (if applicable) for each permitted activity.</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance

permittees associated with industrial and construction activity			
<b>MS4 Mapping</b>			
1. Continue to verify existing drainage assets (inlets, outfalls, pipes, and other features).	<ul style="list-style-type: none"> <li>Percentage of assets that have been field verified*</li> </ul>	Permit Year 4*	Public Works and Transportation: Information Systems
<b>Spill Prevention and Response</b>			
1. Continue response to hazardous materials spills and incidents to prevent and contain spills	<ul style="list-style-type: none"> <li># of major and minor hazardous material spills and quantities collected and/or removed</li> </ul>	Permit Years 1 – 5	Fire Department: HMRT
2. Continue use of a contractor for hazardous material cleanup when the size or type of spill exceeds reportable quantities.	<ul style="list-style-type: none"> <li># of hazardous incident responses by the contractor</li> <li>Annual costs of hazardous material spill.</li> <li>Type of material removed and disposed</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance

\*implemented in Permit Year 4

## MCM #4: Pollution Prevention & Good Housekeeping (PP/GH)

Activity	Measureable Goal (Tracked Annually)	Implementation Schedule	Responsible Party / Department
<b>PP/GH Program Creation and Implementation</b>			
<i>IDENTIFY AND IMPLEMENT GOOD HOUSEKEEPING BMPS</i>			
1. Conduct a municipal operations analysis to identify specific operations subject to this MCM	<ul style="list-style-type: none"> <li>Identify pollution generating activities associated with municipal operations*</li> </ul>	Permit Year 4	Public Works and Transportation: Stormwater, Environmental Education
2. Establish a Municipal Facilities Program outlining BMPs for “high priority” facilities (includes manual creation for “high priority” facilities and training)	<ul style="list-style-type: none"> <li># of presentations</li> <li># of attendees</li> </ul>	Permit Year 5 (and next permit term)	Public Works and Transportation: Stormwater, Environmental Education
3. Establish a Municipal Operations and Maintenance Program outlining BMPs for operations and maintenance activities (includes manual creation & training)	<ul style="list-style-type: none"> <li># of presentations</li> <li># of attendees</li> </ul>	Permit Year 5 (and next permit term)	Public Works and Transportation: Stormwater, Environmental Education
<i>REDUCE THE DISCHARGE OF POLLUTANT TO THE MS4</i>			
1. Conduct initial site assessments and identify “high priority” facilities	<ul style="list-style-type: none"> <li># of initial site assessments in the reporting period</li> <li># of high priority facilities identified</li> <li>List of potential pollutants (for each facility)</li> </ul>	Permit Year 5 (and next permit term)	Public Works and Transportation: Stormwater, Environmental Education
2. Reduce discharge of pollutants from COA Facilities	<ul style="list-style-type: none"> <li>Identify and implement site specific BMPs</li> </ul>	Permit Year 5 (and next permit term)	Public Works and Transportation: Stormwater, Environmental Education
3. Reduce discharge of pollutants from COA Operations and Maintenance Activities	<ul style="list-style-type: none"> <li>Identify and implement activity specific BMPs</li> </ul>	Permit Year 5 (and next permit term)	Public Works and Transportation: Stormwater, Environmental Education
4. In-house Facility and Operations Inspection Program for “high priority” facilities	<ul style="list-style-type: none"> <li># of facility site inspections in the reporting period</li> </ul>	Permit Year 5 (and next permit term)	Cross Departmental
5. Decal Program	<ul style="list-style-type: none"> <li># of no dumping inlet decals installed by SW Maintenance Crews in the reporting period*</li> </ul>	Permit Year 4	Public Works and Transportation: Stormwater Field Operations
<i>TRAIN MUNICIPAL EMPLOYEES IN GOOD HOUSEKEEPING PRACTICES</i>			
1. Develop a list of departments and/or division personnel to be trained in implementing PP/GH BMPs.	<ul style="list-style-type: none"> <li># of departments/divisions and employees identified for training in PP/GH BMPs</li> </ul>	Permit Year 5	Public Works and Transportation: Stormwater, Environmental Education
2. Develop training materials	<ul style="list-style-type: none"> <li>N/A</li> </ul>	Permit Year 5	Public Works and Transportation:

			Stormwater, Environmental Education
3. Develop facility and activity specific training schedules and conduct training of identified personnel.	<ul style="list-style-type: none"> <li>• # of training presentations</li> <li>• # of employees trained per department / division</li> </ul>	Permit Year 5	Public Works and Transportation: Stormwater, Environmental Education
4. Conduct training for new employees and non-targeted positions.	<ul style="list-style-type: none"> <li>• # of trainings held for new employees and non-targeted personnel</li> <li>• # of new employees and non-targeted personal trained</li> </ul>	Permit Year 5	Public Works and Transportation: Stormwater, Environmental Education
<b>Waste Handling</b>			
1. Promote good housekeeping practices by managing the recycling and disposal of waste by City facilities	<ul style="list-style-type: none"> <li>• Maintain contracts for proper recycling and disposal of wastes from city facilities</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Solid Waste Division
<b>Pesticide, Herbicide and Fertilizer (PHF) Application</b>			
1. Maintain a list of employees who are licensed pesticide applicators and the number of facilities using PHF.	<ul style="list-style-type: none"> <li>• # of city facilities using PHFs</li> <li>• # of employees who are licensed pesticide applicators</li> </ul>	Permit Year 5 Permit Years 1 – 5	Parks and Recreation Department
<b>List of Municipal Facilities</b>			
1. List of city-owned facilities that require a TPDES stormwater permit for industrial discharges	<ul style="list-style-type: none"> <li>• # of city-owned facilities with MSGP requirements</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
2. List of city-owned facilities subject to the municipal operation, maintenance, and training programs under this MCM	<ul style="list-style-type: none"> <li>• # of city-owned facilities identified to participate in PP/GH activities*</li> </ul>	Permit Year 4	Public Works and Transportation: Stormwater, Environmental Education
3. List of “high priority” facilities subject to the municipal operation, maintenance, and training programs under this MCM	<ul style="list-style-type: none"> <li>• # and description of high priority facilities</li> </ul>	Permit Year 5 (implementation in next permit term)	Public Works and Transportation: Stormwater, Environmental Education

## MCM #5: Industrial and High Risk Runoff

Activity	Measureable Goal (Tracked Annually)	Implementation Schedule	Responsible Party / Department
<b>Inspections and Control Measures</b>			
1. Inspect permitted industrial facilities known to the City (NOI & NEC).	<ul style="list-style-type: none"> <li># and type of inspections performed</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
2. Inspect permitted municipal landfills	<ul style="list-style-type: none"> <li># and type of inspection performed</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
3. Inspect any SARA 313 / EPCRA Title III facilities	<ul style="list-style-type: none"> <li># and type of inspection performed</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
4. Inspect quarterly any non-compliant facilities or sites with benchmark exceedances	<ul style="list-style-type: none"> <li># and type of inspection performed</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
<b>Industrial and High Risk Monitoring Program</b>			
1. Screen facilities with a Standard Industrial Classification Code (SIC) that may require permitting under the MSGP.	<ul style="list-style-type: none"> <li># of facilities identified through screening that have SIC codes that may require a MSGP permit.</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
2. Use benchmark monitoring data review to enhance facility compliance.	<ul style="list-style-type: none"> <li># or % of industrial facilities submitting required benchmark monitoring data*</li> <li># or % facility data sets that are compliant with benchmark parameters*</li> <li># or % facility data sets that are non-compliant with benchmark parameters*</li> <li># of corrective action plans required to achieve compliance*</li> <li># or % action plan facilities brought into compliance*</li> </ul>	Permit Year 4	Public Works and Transportation: Stormwater, Environmental Compliance

## MCM #6: Construction Site Stormwater Runoff

Activity	Measureable Goal (Tracked Annually)	Implementation Schedule	Responsible Party / Department
<b>Requirements to Implement Proper BMPs</b>			
1. Continue requiring all construction permit applicants to supply a SWPPP for land disturbances of 5 acres or greater or that are part of a common plan of development	<ul style="list-style-type: none"> <li># of SWPPPs received and approved</li> </ul>	Permit Years 1 – 5	Community Development & Planning; Public Works and Transportation: Stormwater Engineering
<b>Requirements for Construction Site Operators to Address the Control of Site Waste</b>			
1. City Ordinance and Design Criteria require operators to control site wastes	<ul style="list-style-type: none"> <li>Inspect sites for appropriate control of site waste</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
<b>Inspection of Construction Sites and Enforcement</b>			
1. Inspect construction sites for compliance with stormwater management practices	<ul style="list-style-type: none"> <li>#, type, and location of inspections</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
2. Conduct inspections of construction sites in response to complaints	<ul style="list-style-type: none"> <li>#, type, and location of inspections</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
<b>Appropriate Education and Training Measures for Construction Site Operators</b>			
1. Continue to promote the NCTCOG Construction Inspection Workshop via the Stormwater Website	<ul style="list-style-type: none"> <li>N/A</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Education
<b>Notification of Construction Site Operators of their Responsibilities</b>			
1. Review and revise construction applicant procedures to ensure a process that emphasizes notification of requirements under TPDES permit regulations, and incorporation of appropriate water quality measures.	<ul style="list-style-type: none"> <li># of revisions to process procedures</li> </ul>	Next Permit Term (w/ adoption of USO)	Public Works and Transportation: Stormwater Engineering
<b>Procedures for Site Plan Review</b>			
1. Review and revise procedures for site plan review for water quality impacts.	<ul style="list-style-type: none"> <li># of revisions to site plan review process</li> </ul>	Next Permit Term (w/ adoption of USO)	Public Works and Transportation: Stormwater Engineering
<b>Procedures for Receiving and Considering Input from the Public</b>			
1. Continue current avenues for receiving input from the public (e.g. COA Action Center; COA Action	<ul style="list-style-type: none"> <li># of requests forwarded from the COA Action Center</li> <li># of online Citizen Action</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance and Environmental Education

Request; Stormwater website; Stormwater Educator).	Requests received <ul style="list-style-type: none"> <li>• Maintain the Stormwater Education email address</li> </ul>		
<b>List of Construction Sites</b>			
1. Maintain a list of active construction sites that are inspected for compliance.	<ul style="list-style-type: none"> <li>• # of sites added</li> <li>• # of sites terminated</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance

## MCM #7: Public Education, Outreach, Involvement, and Participation

Activity	Measureable Goal (Tracked Annually)	Implementation Schedule	Responsible Party / Department
<b>Public Education and Outreach – Education Programs</b>			
<b>CLASSROOM PROGRAM</b>			
1. Present a minimum of 10 presentations to K-12 students within the Arlington city limits including assemblies, camps, story time, and other events.	<ul style="list-style-type: none"> <li>• # of presentations conducted</li> <li>• # of promotional items distributed</li> <li>• # of presentation attendees</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Education
2. Develop a municipal library program for young readers	<ul style="list-style-type: none"> <li>• # of presentations conducted</li> <li>• # of promotional items distributed</li> <li>• # of presentation attendees</li> </ul>	Permit Years 5	Public Works and Transportation: Stormwater, Environmental Education
<b>COMMUNITY PROGRAM</b>			
1. Present a minimum of 10 presentations to community organizations covering basic stormwater topics.	<ul style="list-style-type: none"> <li>• # of presentations conducted</li> <li>• # of promotional items distributed</li> <li>• # of presentation attendees</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Education
2. Apartment Complex Outreach	<ul style="list-style-type: none"> <li>• # of apartment complexes contacted*</li> <li>• # of education material USBs distributed*</li> </ul>	Permit Year 4	Public Works and Transportation: Stormwater, Environmental Education
3. Permitting Outreach	<ul style="list-style-type: none"> <li>• # of educational materials distributed</li> </ul>	Permit Year 5	Public Works and Transportation: Stormwater, Environmental Education
<b>MEDIA PROGRAM</b>			
1. Continue traditional (print) media education (via newspaper advertisements, utility bill inserts, and other print media).	<ul style="list-style-type: none"> <li>• # and type of media feature prepared</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Education
2. Implement a social media education program	<ul style="list-style-type: none"> <li>• # of posts to Twitter, Facebook, &amp; COA website</li> </ul>	Permit Year 5	Public Works and Transportation: Stormwater, Environmental Education
3. Continue to develop and maintain the Stormwater Management website	<ul style="list-style-type: none"> <li>• N/A*</li> </ul>	Permit Year 4	Public Works and Transportation: Stormwater, Environmental Education
4. Develop SW Mgmt. Guide Series (on pollution prevention & flood safety) for citizens.	<ul style="list-style-type: none"> <li>• # &amp; description of guides developed during the reporting period</li> </ul>	Permit Year 5	Public Works and Transportation: Stormwater, Environmental Education
<b>IN-HOUSE PROGRAM</b>			
See MCM 4 for full program details		Permit Year 5	Public Works and Transportation: Stormwater, Environmental Education

<b>Public Education and Outreach – Reporting, Disposal, and Proper Use</b>			
1. Continue to promote, publicize, and facilitate the public reporting of illicit discharges; the proper management and disposal of used oil and HHW, and the proper use, application, and disposal of PHF.	<ul style="list-style-type: none"> <li>• See “Public Education and Outreach – Education Programs” above</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Education
<b>Public Involvement and Participation</b>			
<i>VOLUNTEER OPPORTUNITIES</i>			
1. Encourage participation in creek and lake clean-up events sponsored by COA and/or KAB.	<ul style="list-style-type: none"> <li>• # of participants in the clean-up events</li> <li>• Quantity of litter removed (if available)</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Education
2. Encourage participation in the storm drain marking program.	<ul style="list-style-type: none"> <li>• # of participants</li> <li>• # and location of storm drains marked</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Education
<i>SWMP DEVELOPMENT AND PUBLIC INVOLVEMENT</i>			
1. Update Stormwater website to include SWMP for online viewing and include an email address for comments and questions.	<ul style="list-style-type: none"> <li>• # of online comments*</li> </ul>	Permit Year 4	Public Works and Transportation: Stormwater, Environmental Compliance and Environmental Education
2. Maintain the SWMP at City Hall for in-person viewing.	<ul style="list-style-type: none"> <li>• # of in-person views / requests*</li> </ul>	Permit Year 4	Public Works and Transportation: Stormwater, Environmental Compliance
3. Solicit input from the public for SWMP revisions (continuous)	<ul style="list-style-type: none"> <li>• Comments received*</li> </ul>	Permit Year 4	Public Works and Transportation: Stormwater, Environmental Compliance

## MCM #8: Monitoring, Evaluation, and Reporting

Activity	Measurable Goal (Tracked Annually)	Implementation Schedule	Responsible Party / Department
<b>Storm Event Discharge Monitoring</b>			
1. Coordinate with the NCTCOG Regional Wet Weather Characterization Program and perform sampling per RWWCP.	<ul style="list-style-type: none"> <li>Wet weather screening results for each monitoring location</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
<b>Dry Weather Screening Program</b>			
1. Investigate flows from outfalls during dry weather, sample the discharge, investigate the source, and act to eliminate the discharge.	<ul style="list-style-type: none"> <li># of outfalls inspected, discharges found, and sources identified</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
<b>Inner City Creek Sampling</b>			
<i>CLEAN RIVERS PROGRAM</i>			
1. Participate in the Clean Rivers Program as coordinated by the Trinity River Authority (TRA).	<ul style="list-style-type: none"> <li>Sample 8 predetermined locations quarterly</li> <li>Sample 7 locations monthly for indicator bacteria</li> </ul>	Permit Years 3 – 5 Permit Year 5	Public Works and Transportation: Stormwater, Environmental Compliance
<i>MONTHLY CREEK SAMPLING</i>			
1. Perform monthly water quality sampling at 32 predetermined creek sample sites.	<ul style="list-style-type: none"> <li>Sample for eleven water quality parameters at 32 sample sites monthly</li> <li>Investigate positive indication of pollution</li> </ul>	Permit Years 1 – 5	Public Works and Transportation: Stormwater, Environmental Compliance
<b>Industrial and High Risk Runoff Monitoring Program</b>			
1. Identify facilities that are required to conduct benchmark monitoring.	<ul style="list-style-type: none"> <li># of facilities required to submit monitoring data*</li> <li># of data sets received and reviewed*</li> <li>See also “MCM #5: Industrial and High Risk Monitoring Program”</li> </ul>	Permit Years 4	Public Works and Transportation: Stormwater, Environmental Compliance