



City of Fort Worth

Co-Permittee

Tarrant Regional Water District

Stormwater Management Plan

2018 – 2023 Permit Term

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List of Acronyms

BMP	Best Management Practice
CFR	Code of Federal Regulation
CFW	City of Fort Worth
DWFS	Dry Weather Field Screening
ECC	City of Fort Worth Environmental Collection Center
EPCRA	Emergency Planning and Community Right to Know Act
ETJ	Extra-Territorial Jurisdiction
EQD	City of Fort Worth Environmental Quality Division
FEMA	Federal Emergency Management Agency
FOG	Fats, Oils, and Grease
FWFD	Fort Worth Fire Department
HazMat	hazardous materials
HID	high-intensity discharge (light)
iSWM	<i>integrated</i> Stormwater Management
MBAS	Methylene blue active substances
MCM	Minimum Control Measure
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer System
MSGP	Multi-Sector General Permit
NCTCOG	North Central Texas Council of Governments
NHD	National Hydrographic Dataset
NOI	Notice of Intent
NOT	Notice of Termination
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
PCB	Polychlorinated biphenyl
RWWCP	Regional Wet Weather Characterization Program
ROW	Right of way
SSOI	Sanitary Sewer Overflow Initiative
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
TCEQ	Texas Commission on Environmental Quality
TPDES	Texas Pollutant Discharge Elimination System
TPW	City of Fort Worth Transportation and Public Works Department
TRWD	Tarrant Regional Water District
TxDOT	Texas Department of Transportation
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USDA	United States Department of Agriculture
USGS	United States Geological Survey

Introduction

The City of Fort Worth and the Tarrant Regional Water District (TRWD) have been permitted Municipal Separate Storm Sewer System (MS4) entities since 1996 and remain committed to improving water quality. The Stormwater Management Plan (SWMP) described herein accurately reflects all current stormwater related activities for the City of Fort Worth and TRWD. Although some of these program activities differ from the activities as described in the City's past permit applications with the U.S. Environmental Protection Agency (USEPA) and the Texas Commission on Environmental Quality (TCEQ), those modifications assist the City and TRWD to more effectively meet the goals of the overall program. As the programs continue to grow, further modifications will be needed to meet the higher goals of the City and TRWD. These will be highlighted in future submissions to the TCEQ.

To fully utilize the partnership between the City of Fort Worth and TRWD, a stormwater task force between the City of Fort Worth and the Tarrant Regional Water District exists to encourage communication and the free exchange of ideas in the development of program areas and special projects. The potential implementations of these discussions are evaluated to improve the MS4 operations in the future. Project status updates are planned for inclusion in annual reports.

Currently the City of Fort Worth and TRWD are working on a cooperative effort to develop a water quality program to consider measures to better address stormwater runoff within areas with potential for most-directly influencing water quality in the Trinity River.

This effort includes main components: Stormwater Guidance Document Development and Water Quality Development Zones. The first, Stormwater Guidance Document Development developed by TRWD, includes assisting in the planning and construction of new development or significant redevelopment in areas that could have an impact on the quality of the Trinity River. The second, Water Quality Development Zones, involves identifying different zones at varying proximity to the Trinity River to potentially offer higher levels of protection in areas of greater potential impact to the water quality and quantity of the Trinity River. Both components seek to identify and if feasible, implement best management practices targeting floatables, total suspended solids, nutrients, and bacteria.

Minimum Control Measures (MCM)

1.0 MS4 Maintenance Activities

1.1 Structural Controls

To the maximum extent practicable (MEP), the permittees shall continue to operate and maintain the MS4, including any stormwater structural controls, in such a manner as to reduce erosion and the discharge of pollutants.

The City has an active storm drain inlet cleaning and maintenance program to remove pollutants before they reach receiving waters. Stormwater Operations operates six, two-man, VACTOR crews to clean storm drainage structures. VACTOR is a highly specialized truck that utilizes high-pressure water hoses and a vacuum system. There are an estimated 35,000 curb inlets and drop boxes in Fort Worth and the VACTOR crews clean approximately 25% of these annually (10 per day, 200 working days per year). These crews work a routine schedule but also respond to complaints from citizens, neighborhood associations, and others. Stormwater Operations also operates two VACTOR crews for Emergency Response. In the event of storm drain system clogs, collapses, or other emergency, they will respond.

1.2 Floatables

The permittees shall continue to 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.

1.2.1 City of Fort Worth Floatables Program

The City's Park and Recreation Department has multiple "Adopt a Spot" programs, similar to the Texas Department of Transportation's (TxDOT) Adopt-A-Highway program, where civic groups are encouraged to sponsor regular litter clean-ups in city parks, medians, and other locations where litter collects. The Fort Worth Code Compliance Department's Solid Waste Division is responsible for citywide trash, garbage, solid waste collection and a household paper, plastics, and metals recycling program. Additionally, Keep Fort Worth Beautiful through the Environmental Quality Division actively organizes volunteer activities such as the Cowtown Great American Cleanup and Fall Litter Stomp. The Fort Worth Code Compliance Department conducts and enforces illegal dumping investigations and assures that outdoor accumulations of human-generated solid refuse such as trash, debris, and garbage are cleaned up. All of these activities reduce the discharge of floatables (litter and other human generated solid waste). Data regarding actual amounts of litter removed with these programs are included in the Annual Reports. Significant amounts of trash are prevented from entering the City's creeks and ponds or other Waters of the United States through these efforts. The City of Fort Worth also partners with TRWD and other regional partners in the Reverse Litter campaign. Reverse Litter is an anti-litter awareness and education campaign that is focused on protecting North Texas waterways from trash and debris.

In addition to the programs described above for reducing discharge of floatables into the MS4, the permit includes a monitoring requirement to assess the quantity of floatables discharging to or from the MS4. This program is described in Section 8.5, Monitoring, Evaluation, and Reporting, of this document.

1.2.1 TRWD Program

The TRWD annually sponsors Trinity River Awareness Day; an educational event focusing on activities the public can perform to improve water quality in the Trinity River watershed. Part of this event involves a river clean up where individual volunteers and volunteer groups are encouraged to remove litter from several sites along the river within Fort Worth. During the last event, 6,500 volunteers removed 15.39 tons of trash from the river.

TRWD also sponsors an annual Eagle Mountain Lake Area Cleanup. Eagle Mountain Lake is a reservoir on the West Fork of the Trinity River with portions of the lake within Fort Worth's corporate boundaries. During the last event, 525 volunteers removed approximately 1.9 tons of trash.

1.3 Roadways

The permittees shall continue to operate and maintain public streets, roads, and highways to minimize the discharge of pollutants, including pollutants related to deicing or sanding activities.

The City has an active spill response program addressing hazardous and non-hazardous spills to roads and streets. The City's street sweeping program primarily includes routine sweeping in the downtown area and clean-up after deicing.

1.3.1 Fort Worth Spill Response

The City has a spill response program to remediate spills of hazardous and non-hazardous materials to the roads and streets. This program is described in detail in Section 3.11, Spill Prevention, and Response, of this document. Primary response is through the Fire Department (FWFD) with assistance from the Environmental Quality Division. The Street Services Division also occasionally assists by spreading aggregate over some spills to soak up the material. The material is swept up with street sweepers and transported to a secure storage area for proper disposal. Spills, involving assistance from Street Services, are typified by hydraulic fluids leaking from a moving vehicle or an oil spill that vehicles have tracked through resulting in several blocks of roadway being contaminated. When there is a large spill such as a gasoline tanker overturning with thousands of gallons of product entering the storm drain, Street Services assists by supplying large amounts of aggregate used to construct dams in the storm drain. This action effectively contains the spill and prevents a discharge to the Waters of the United States.

1.3.2 TRWD Spill Response

TRWD has a spill response program for containment of oils on Eagle Mountain Lake and the Trinity River. Cleanup efforts are typically contracted out.

1.3.3 Street Sweeping

A private contractor is used to clean approximately 140 blocks of the Central Business District (downtown) on a weekly basis. This activity is funded by the Fort Worth Public Improvement District No. 1 and managed by Downtown Fort Worth, Inc. The primary function of this service is litter control though oil, grease, and other pollutants associated with streets are effectively removed.

The Street Services Division performs street sweeping for several reasons. The first is sweeping before a street is seal coated to prepare the surface for treatment. The street is also swept after seal coating. Street sweeping is also performed for the benefit of removing de-icing materials after winter storms. During snow or icy weather, Street Services places aggregate on bridges, overpasses, and selected streets to improve traction. To minimize pollutant discharges to the MS4, the aggregate is swept up after the storms have passed and then recycled whenever possible. The remaining dirt and salt is landfilled.

The Environmental Quality Division in the Code Compliance Department purchased four street sweepers that are operated by the Solid Waste Division. Currently there are two crews that operate these street sweepers on a regular basis in addition to complaints.

2.0 Post-Construction Stormwater Control Measures

2.1 Areas of New Development and Significant Redevelopment

The permittees shall continue implementation and enforcement of the 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 stormwater as a result of new development; and*
- b) Reducing erosion and the discharge of pollutants in stormwater from areas of redevelopment.*

The City incorporates a wide variety of components into policy, planning, development, and implementation. The planning process and regulation of new development and redevelopment are outlined in the Fort Worth Comprehensive Plan, the Development Procedures Manual, as well as through the Subdivision Ordinance, Comprehensive Zoning Ordinance, Tree Ordinance, Grading Ordinance, and Floodplain Ordinance. The City of Fort Worth recognizes the importance of integrating stormwater quality issues into its planning process.

2.1.1 New Development

Limiting increases in erosion and the discharge of pollutants in storm water as a result of new development.

Through the Subdivision Ordinance, the City of Fort Worth has adopted the 2015 Stormwater Management Design Manual consisting of the Local Criteria section and technical chapters of the North Central Texas Council of Government's

(NCTCOG) *integrated* Stormwater Management (*i*SWM) Design Manual. This manual establishes guidelines for the community in drainage policy and criteria so that new development does not increase flooding, erosion, and water pollution problems. The policies and standards contained within this manual apply to all development and redevelopment projects associated with platting and permit issuance. The goals and objectives of the design manual are to:

- Establish and implement drainage policy and criteria so that new development does not increase flooding problems, cause erosion or pollute downstream water bodies.
- Facilitate the development of comprehensive watershed planning that promotes orderly growth and results in an integrated system of public and private stormwater infrastructure.
- Minimize flood risks to citizens and properties, and stabilize or decrease stream bank and channel erosion on creeks, channels, and streams.
- Improve stormwater quality in creeks, rivers, and other water bodies, remove pollutants, enhance the environment and mimic the natural drainage system, to the extent practicable, in conformance with the Texas Pollutant Discharge Elimination System (TPDES) permit requirements.
- Support multi-use functions of stormwater facilities for trails, green space, parks, greenways or corridors, stormwater quality treatment, and other recreational and natural features, provided they are compatible with the flood control functions of the stormwater facility.
- Encourage a more standardized, integrated land development process.

Included in the 2015 City's Stormwater Criteria Manual are a number of policy statements that govern development and redevelopment projects, of all sizes, in the City of Fort Worth. The following Policy statements are included in the manual:

- All development within the City of Fort Worth City Limits or Extra-territorial Jurisdiction (ETJ) shall include planning, design, and construction of storm drainage systems in accordance with this Stormwater Management Design Manual, Plan Commission Rules and Regulations, and Policy for the Installation of Community Facilities.
- All drainage related plans and studies shall be prepared and sealed by a Licensed Professional Engineer with a valid license from the State of Texas. The Engineer shall attest that the design was conducted in accordance with this Stormwater Management Design Manual.
- For currently developed areas within the City of Fort Worth with planned re-development, stormwater discharges and velocities from the project should not exceed discharges and velocities from current (existing) developed conditions, unless the downstream storm drainage system is designed (or adequate) to convey the future (increased) discharges and velocities.
- All drainage studies and design plans shall be formulated and based upon ultimate, fully developed watershed or drainage area runoff conditions.

In certain circumstances where regional detention is in place or a master plan has been adopted, a development may plan to receive less than ultimate developed flow from upstream with the approval of the City of Fort Worth Transportation and Public Works Department (TPW). The rainfall frequency criteria for stormwater facilities, as enumerated within this Stormwater Management Design Manual, shall be utilized for all drainage studies and design plans.

- Stormwater must be carried to an "adequate or acceptable outfall". An adequate outfall is one that does not create or increase flooding or erosion conditions downstream and is in all cases subject to the approval of TPW.
- Proposed stormwater discharge rates and velocities from a development shall not exceed the runoff from existing, pre-development conditions, unless a detailed study is prepared that demonstrates that no unacceptable adverse impacts will be created. Adverse impacts include: new or increased flooding of existing insurable (Federal Emergency Management Agency - FEMA) structures, significant increases in flood elevations over existing roadways, unacceptable rises in FEMA base flood elevations, and new or increased stream bank erosion.
- If a proposed development drains into an improved channel or stormwater drainage system designed under a previous CFW drainage policy, then the hydraulic capacities of downstream facilities must be checked to verify that increased flows, caused by the new development, will not exceed the capacity of the existing system or cause increased downstream structure flooding. If there is not sufficient capacity to prevent increased downstream flooding, then detention or other acceptable measures must be adopted to accommodate the increase in runoff due to the proposed development.
- Stormwater runoff may be stored in detention and retention basins to mitigate potential downstream problems caused by a proposed development. Proposed detention or retention basins shall be analyzed both individually and as a part of the watershed system, to assure compatibility with one another and with the City's overall Stormwater Management Master Plan for that watershed (if available). Storage of stormwater runoff, near to the points of rainfall occurrence, such as the use of parking lots, ball fields, property line swales, parks, road embankments, borrow pits and on-site ponds is desirable and encouraged.
- When detention is used to attenuate peak discharge from a proposed development, runoff must be controlled for the applicable storms so that detained post-development peak discharges do not adversely impact downstream flooding and stream bank conditions.
- Alternatives to detention or retention, for mitigation of potential downstream problems caused by proposed development, include: acquisition of expanded drainage easements, right of way (ROW), or property owner agreements; downstream channel and/or roadway bridge/culvert improvements or stream bank erosion protection; and financial contributions to the CFW Stormwater Program for future

improvements. These alternatives will be considered, as presented by the developer, by the Director of the Transportation and Public Works Department, on a case-by-case basis.

- Stream bank stabilization and protection features to reduce or prevent erosion and sedimentation for creeks, streams, and channels shall be required, as specified in this Manual.

Specified Requirements for Easements

- All proposed developments within the City of Fort Worth City Limits or ETJ shall comply with all local, county, state and federal regulations and all required permits or approvals shall be obtained by the developer.
- The policy of the City of Fort Worth is to avoid substantial or significant transfer of stormwater drainage runoff from one basin to another and to maintain historical drainage paths whenever possible. However, the transfer of stormwater drainage from basin to basin may be necessary in certain instances and will be reviewed and a variance can be made by the TPW, in accordance with established variance procedures.

2.1.2 Credit Policy Manual

The City of Fort Worth adopted a stormwater utility in July 2006 to provide stable and equitable funding for its stormwater management program. Developed properties are charged monthly fees based primarily on the amount of impervious area on a parcel of property. The ordinance establishing the utility also gives the TPW Director the authority to grant credits to non-residential rate payers who voluntarily use stormwater management techniques or BMPs to offset the impacts of their property on stormwater runoff and water quality. Individual properties can be eligible for multiple credits up to a maximum total credit of 40%. Credits are granted for a number of practices including but not limited to water quality treatment, inlet trash collection, active education programs, and channel protection detention.

2.1.3 Regional Perspectives on New Development

Since the City of Fort Worth is part of a larger urban area sharing major watersheds, the City is actively involved in regional discussions of water quality issues related to new development through the NCTCOG.

In the Dallas-Fort Worth metropolitan area, municipalities share a common urban area and many of these cities are under TPDES stormwater regulations. The City of Fort Worth worked at the regional level through NCTCOG in developing a template for designing water quality management programs for new development and significant redevelopment within the region. The template was drafted with participation from the other six Phase I cities, builders, and developers. The City of Fort Worth program, designed using this template, was submitted to USEPA and was accepted as satisfying the City's Implementation and Compliance Schedule for "Developing planning procedures to address water quality concerns to incorporate into existing comprehensive plan" due on or before February 1, 2000. The City of Fort Worth continues to adopt the current version of *i*SWM as new standards are developed.

2.2 Redevelopment

Reducing erosion and the discharge of pollutants in stormwater from areas of redevelopment.

The documents, policies, rules and ordinances discussed above guide development as well as any redevelopment project in the City of Fort Worth.

2.3 Development greater than one acre

The permittee shall continue to implement a comprehensive master planning process (or equivalent) 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.

The permittees shall evaluate and revise the existing SWMP 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.

Currently, all development and redevelopment projects in the City of Fort Worth are required to adhere to the established documents, manuals, policies, rules, and ordinances applied to all development and redevelopment projects associated with platting activities and modifications to public infrastructure. The primary mechanism regulating post-construction stormwater controls in the City of Fort Worth is the Stormwater Management Design Manual. This manual has been adopted via ordinance to implement structural and nonstructural controls for our community.

To further address the post-construction control requirements addressed in this section of the permit, in June 2012 the City of Fort Worth adopted a Grading Ordinance which controls grading activities for all projects which disturb 0.5 acres or more of land. This was later amended to apply to projects that disturb 1.0 acres or more of land in 2015. This ordinance also includes the adoption of the 2010 revision of the NCTCOG iSWM manual and updated local criteria manual to increase the level of protection of the City of Fort Worth's stormwater infrastructure. The manual adopts the explicit standards for construction runoff control and requires an integrated process for construction and post-construction controls.

The City of Fort Worth is continually evaluating current and upcoming changes in local ordinance, policies and procedures to ensure the requirements of this permit are adequately addressed.

Additionally this manual addresses the need to establish policies and procedures to provide for long-term operation and maintenance of BMPs within the City of Fort Worth. Developers implementing structural BMP's are required to enter into an agreement with the city for perpetual maintenance. Policy statements in the manual addressing long term operation and maintenance are:

City Maintenance - The CFW will provide for perpetual maintenance, in accordance with adopted city maintenance standards, of all public drainage facilities located within dedicated easements and constructed to the CFW standards. Access shall be provided and dedicated by the developer to all public stormwater facilities in developments for maintenance and inspection by the CFW.

Private Maintenance - Private drainage facilities include those drainage improvements which are located on private property and which handle only private water. Private drainage facilities may also include detention or retention ponds, dams, and other stormwater controls which collect public water, as well as drainage ways not constructed to City standards but which convey public water. Such facilities must be designed in accordance with sound engineering practices and reviewed and inspected by the City. Requirements include an agreement for perpetual maintenance of private drainage facilities serving public water be executed with the City prior to acceptance of the final plat. This agreement runs with the land and can be tied to commercial property or to an owner's association, but not to individual residential lots. Additionally, access will be provided by the developer/owner to all private drainage facilities where there may be a public safety concern for inspection by the CFW.

2.4 Flood Control Projects

The permittees shall assess the impacts on the receiving water(s) 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 stormwater. If applicable, the retrofitting of existing structural flood control devices to provide additional pollutant removal from stormwater shall be implemented to the maximum extent practicable.

In order to assure that proposed flood control projects assess the impacts on the water quality of receiving water bodies, the City performs a project design review of all future, major flood control projects. The project design review utilizes criteria contained in the City of Fort Worth Stormwater Criteria Manual, 2015 (Design Manual).

By definition, the purpose of a flood control project is to reduce flood damage. Flood control and water quality management strategies differ greatly. Flood control projects are designed to manage stormwater runoff resulting from large, infrequent storm events. Normally, these projects are designed to quickly convey runoff resulting from up to a 100-year storm event. On the other hand, water quality management facilities are designed to handle runoff from much smaller, more frequent storm events (1-2 year storm event). In a given year, 70-90% of all runoff (and generally the associated pollutants) typically result from storm events producing less than 2 inches rainfall. Water quality management facilities attempt to slow stormwater runoff, maximizing hydraulic detention periods to facilitate sedimentation and biological uptake. While this program element is not focused on providing comprehensive water quality management, water quality considerations are included in the design process. Discharge rates for the two year and 10 year event are analyzed in accordance with the Design Manual for both flood control projects as well as new development. The goal is to assure that project impacts to receiving water quality are assessed and minimized

through the use of sound engineering design principles. Where possible, water quality treatment principles are incorporated into the design of flood control projects.

2.4.1 Existing Flood Control Structure Evaluation

During the first permit term two separate studies by the City of Fort Worth and TRWD were performed to address the feasibility of converting existing flood control sump areas into detention/retention ponds for pollutant removal.

The City of Fort Worth contracted with consultants in studying 11 flood control structures for the possible retrofitting of BMPs. These were the only flood control structures that the City owned and/or operated at that time.

The evaluations reviewed the design of the existing structural control. The considerations below were addressed during each facility evaluation to determine if retrofitting for water quality enhancement was feasible and practical. The study indicated that none of the 11 structures were good candidates for retrofitting based on the criteria above.

In 2012, a consultant was retained to provide peer review of flood control projects as an additional means of identifying and evaluating feasible water quality options. There are several ongoing flood control projects with initiatives with water quality benefits. The status of these is submitted with the annual report.

In 2015, a consultant was contracted to prepare a new Floodplain Management Plan. The draft plan was released for review September 28, 2015. The City of Fort Worth and TRWD will work together to evaluate options for updating the development comprehensive plan as necessary.

2.5 TRWD Program

The plans for all construction projects on any TRWD land owned or controlled by fee ownership or easement on the Fort Worth Floodway are reviewed by District staff for erosion control measures prior to permit issuance. TRWD has developed a pamphlet that details set of the criteria for construction that occurs within its jurisdictional area of the Fort Worth Floodway. These criteria are to be used as a supplement to the U.S. Army Corps of Engineers (USACE), Fort Worth District (CESWF) Pamphlet SWFP 1150-2-1. The pamphlet details the criteria requiring post-construction grass establishment and erosion protection utilizing cabled articulating revetment systems. Long term post construction maintenance on these practices installed on the floodway is done by TRWD. In addition to the Pamphlet requirements, the District has also developed a TRWD Developer Manual detailing the water quality requirements for new construction and re-construction with the Floodway. All sites within TRWD jurisdiction must have a BMP to remove sediment, floatables, nutrients, and bacteria from runoff on the site before it enters the Trinity River.

3.0 Illicit Discharge Detection and Elimination

3.1 Illicit and Allowable Discharges

The permittees shall prohibit illicit non-storm water discharges from entering the MS4. The permittees shall continue to develop a program, including a schedule, to detect and eliminate illicit discharges and improper disposal into the MS4. This program shall include:

- A) A description of the program, including inspections, to implement and enforce an ordinance, orders, or similar means to prevent illicit discharges to the MS4;*
- B) A description of procedures to conduct on-going field screening activities, including areas or locations that will be evaluated by such field screens;*
- C) A description of procedures to be followed to investigate portions of the MS4 that indicate a reasonable potential of containing illicit discharges or other sources of non-stormwater;*
- D) A description of procedures to prevent, contain, and respond to spills that may discharge into the MS4;*
- E) A description of a program to promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges from the MS4;*
- F) A description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials; and*
- G) A description of controls to limit infiltration of seepage from municipal sanitary sewers to the MS4 where necessary.*

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/TPDES permit is not required; and*
- C. Miscellaneous non-stormwater discharges (see list below).*

The SWMP must identify all categories of miscellaneous, non-stormwater discharges that may be discharged into the MS, and include a description of any local controls or conditions placed on discharges exempted from the prohibition on non-stormwater.

Miscellaneous, non-stormwater discharges that may be authorized by the permittees include:

- a) Water line flushing;*
- b) Landscape irrigation;*
- c) Diverted stream flows;*
- d) Rising ground waters;*
- e) Uncontaminated ground water infiltration;*
- f) Uncontaminated pumped groundwater;*
- g) Discharges from potable water sources;*
- h) Foundation drains;*
- i) Air conditioning condensation;*

- j) Irrigation water;
- k) Springs;
- l) Water from crawl space pumps;
- m) Footing drains;
- n) Lawn watering;
- o) Street wash water;
- p) Individual residential vehicle washing;
- q) Wash waters using only potable water, and which are similar in quality and character to street wash water or individual residential vehicle washing but without the use of detergents or surfactants;
- r) Flows from riparian habitats and wetlands;
- s) Dechlorinated swimming pool discharges;
- t) Other allowable non-stormwater discharges listed in 40 CFR § 122.26(d)(2)(iv)(B)(1);
- u) other allowable non-stormwater discharges listed in the TPDES Construction General Permit No. TXR150000 and TPDES Multi Sector General Permit No. TXR050000; and
- v) other similar occasional incidental non-stormwater discharges as determined in item ii. above).

Program descriptions must address discharges or flows from fire-fighting activities only where such discharges or flows are identified as significant sources of pollutants

The permittees shall prohibit any individual non-stormwater discharge otherwise exempted under this paragraph from the prohibition on non-stormwater if it is determined by the permittees that the discharges is contributing significant amounts of pollutants to the MS4.

The City of Fort Worth has listed all allowed non-stormwater discharges in the Environmental Protection and Compliance Chapter of City Code, which can be found in Chapter §12.5-302. The Environmental Code was formally adopted by the City Council on November 28, 1995 and continues to be updated as necessary. Chapter §12.5, Article III, Stormwater Protection, describes what constitutes a stormwater violation and what enforcement actions can be taken and can be found online at: [http://library.amlegal.com/nxt/gateway.dll/Texas/ftworth_tx/cityoffortworthtexascodeofordinances?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:fortworth_tx](http://library.amlegal.com/nxt/gateway.dll/Texas/ftworth_tx/cityoffortworthtexascodeofordinances?f=templates$fn=default.htm$3.0$vid=amlegal:fortworth_tx). USEPA made this code available as a model ordinance for use by other cities by publishing it on their national Web Page.

3.2 TRWD Program

TRWD has a general ordinance which prohibits pollution immediately adjacent to its reservoirs and within areas under District jurisdiction. This ordinance gives the District enforcement power to eliminate discharges and improper disposal. Illicit discharges are most often identified through public complaints reported to District offices. Environmental inspectors with the TRWD perform investigations and respond to water quality complaints. Although the District has enforcement authority, it typically notifies other appropriate agencies, such as the co-permittees and TCEQ.

TRWD has written into its floodway construction criteria some preventative measures specific to water pumps set in the floodway. All pumps must be set in a containment structure capable of containing 1.5 times the total quantity of fluids within the pump. A containment boom must also be in place in the river at a 50 foot radius from the extraction point. In addition, all water pumps placed below the top of river channel must be removed at end of workday, unless supervision is provided 24 hours a day. All of these measures are an effort to prevent accidental discharges from the pump units into the river.

3.3 Detection and Elimination of Illicit Discharges

The permittees shall continue to require the operator of an illicit discharge or improper disposal practice to eliminate 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 continue to require an expeditious schedule. Until the illicit discharge or improper disposal is eliminated the permittees shall continue to require the operator of the illicit discharge to take all reasonable measures to minimize the discharge of pollutants to the MS4.

The permittees shall continue to:

- a) keep a list of techniques used for detecting illicit discharges and revise the list as necessary; and*
- b) use appropriate actions and enforcement procedures for removing the source of an illicit discharge, and revise where necessary.*

As previously noted, the City passed a comprehensive environmental ordinance in 1995 and has amended the ordinance as necessary since that time. Enforcement of this ordinance is primarily the responsibility of Environmental Quality Division (EQD) personnel involved in 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 code be observed and can be found in Chapter §12.5-302 of the City Code.

3.4 Overflows and Infiltration

The permittees shall continue to implement controls where necessary and where feasible to prevent dry weather and wet weather overflows from sanitary sewers into the MS4. The permittees shall continue to limit the infiltration of seepage from municipal sanitary sewers into the MS4.

3.4.1 Fort Worth Water Department Inflow and Infiltration Program

Effective June 11, 2018, the Fort Worth Water Department re-entered into a Sanitary Sewer Overflow (SSO) Initiative Agreement with the Texas Commission on Environmental Quality (TCEQ) to reduce the amount of overflows of sanitary sewage in the City of Fort Worth over the next ten years.

The Fort Worth Water Department actively evaluates and rehabilitates its collection system to ensure a reduction of risk to the public health and the environment and to comply with TCEQ's Sanitary Sewer Overflow Initiative Agreement (Case No. 55971).

The Fort Worth Water Department has committed to the following provisions of the Agreement:

The Fort Worth Water Department will install and maintain wastewater flow meters within the wastewater collection system to properly schedule and size collection system capital improvements, monitor inflow and infiltration into areas of the collection system, and validate billing meters.

The Fort Worth Water Department will clean and inspect collection lines, prioritizing those efforts based on Sanitary Sewer Overflows (SSOs) and maintenance history.

The Fort Worth Water Department will replace or rehabilitate wastewater collection lines, utilizing the asset risk model as well as the most recent inspection, assessment, and maintenance data to prioritize replacements.

Provide an itemized list of contracts incorporating rehabilitation and replacement of existing sanitary sewer lines, as well as the overall length of lines.

3.5 TRWD Program

The TRWD has a General Ordinance in place that prohibits untreated sanitary sewer discharges into its reservoirs and within the jurisdictional area of the District. Employees perform inspections of District properties and illicit discharges are reported to District offices where appropriate personnel are assigned to investigate and mitigate the discharge. A description of the General Ordinance is contained in the TRWD management program description section of this re-application.

3.6 Household Hazardous Waste and Used Motor Vehicle Fluids

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

- A) The permittees shall continue to ensure the implementation of programs to collect used motor vehicle 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 programs shall be readily available to the residential sector within the MS4 and shall be publicized and promoted on a regular basis.*
- B) Household hazardous waste collection centers that are operated by the permittees as a SWMP element are not considered an industrial activity requiring a separate TPDES authorization for the discharge of storm water.*

The City's environmental ordinance prohibits discharge/dumping of materials such as grass clippings, leaf litter, and animal wastes into storm drains (e.g. sweeping collected grass clippings into a curb inlet or dumping bags of collected leaves into a drainage channel). However, it is not the intent of the ordinance to prohibit natural occurrences (e.g. leaves that fall from trees into storm drainage channels or grass clippings left as mulch that are inadvertently washed into a storm drain during a rain event).

The City of Fort Worth operates a permanent household hazardous waste collection center, known as the Environmental Collection Center (ECC). Residents of Fort Worth and other cities participating in our program can bring a variety of wastes to the center for disposal, free of charge. The ECC will accept all types of automotive fluids, batteries, and household chemicals; fluorescent lights; pesticides; herbicides; paint; and most types of hazardous materials. Materials not accepted at the ECC include: ammunition, medical waste, explosives, radioactive materials, electronics, gas cylinders, and tires. Understanding that many citizens either cannot, or will not, travel to the center; the City also sponsors numerous mobile collections where employees go into the neighborhoods for one-day collection events. In addition to the ECC, the city has four free drop-off stations open to Fort Worth homeowners and renters that began accepting household hazardous waste in 2017. Drop-off stations may be used for disposal of trash and recyclables, as well as old tires (limit four per household every six months), furniture, minor remodeling debris, brush and yard trimmings, home computers and electronics, and other bulky items such as appliances and televisions.

3.7 Dry Weather Field Screening

To locate portions of the MS4 with suspected illicit discharges and improper disposals, the permittees shall continue implementation of the Dry Weather Screening Program described in Part III, Section B.2.h.i of this permit. 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 screened at least once per five years.

Fort Worth has an ongoing Dry Weather Field Screening (DWFS) program that tests all known major outfalls in the city a minimum of once per five years. Investigators perform trace-back and other follow-up investigation in response to any suspected illicit discharge. The DWFS program is described in detail under Section 8.1.

3.8 Priority Areas

Within one year from the date of permit issuance, the permittees shall develop a list of priority areas likely to have illicit discharges. The permittees shall continue to evaluate and update this list each year and report the results in the annual report.

During spring 2016, EQD began an effort to determine priority areas likely to have illicit discharges. Initial efforts determined outfalls within industrial areas, or outfalls that were within 0.25 miles of industrial areas and drained industrial areas, were most likely to have illicit discharges. Outfalls are also added based on water quality complaints and past illicit discharge history. Each outfall that is identified as priority outfall is screened twice per permit per as part of the Dry Weather Field Screen Monitoring Program discussed in Section 8.1.

3.9 NPDES and TPDES Permittee List

The permittees shall maintain an updated list of dischargers that discharge directly to the MS4 that have been issued an NPDES or a TPDES permit. The list shall include the name, location and permit number (if known) of the discharger.

The City of Fort Worth has developed an online database to track permitted construction sites and industrial facilities. The data was initially populated using information from the EPA Region 6 Notice of Intent (NOI) database. These lists are updated regularly with information obtained from the TCEQ Central Registry and Water Quality General Permits search tool and information gathered by City staff in the course of construction site and industrial facility inspections.

Section §12.5-333 of the City's Environmental Code requires that all facilities required to operate under an NPDES or TPDES permit must send a copy of their NOI to the City.

3.10 MS4 Map

- A. 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 their SWMP.*
- B. The permittee shall document the source information used to develop the MS4 map, including how the outfalls are verified and the process regarding how the map will be updated regularly.*
- C. New MS4 areas: The permittees shall continue to develop and implement procedures to ensure that the above mapping requirements in Part III.B.2.c.xiii are met for any new additions to the MS4.*
- D. Existing MS4 areas: The permittees shall continue to evaluate all existing portions of the MS4 and that the mapping requirements have been implemented to the maximum extent practicable.*

All MS4 assets have been mapped from schematics (drawings/plans) and have been field verified under the previous permit term. The field survey was completed in 2013. Waters of the U.S. are encompassed in the National Hydrography Dataset (NHD) as maintained by the United States Geological Survey (USGS). Currently, stormwater infrastructure data are maintained in GIS by the TPW Stormwater Management Division. MS4 assets are mapped in any newly developed areas, annexations or redevelopments.

3.11 Spill Prevention and Response

The permittees shall continue to implement existing programs that prevent, contain, and respond to spills that may discharge into the MS4. The spill response programs may include:

- a. a combination of spill response actions by the permittees or another public or private entity; or*
- b. legal requirements for private entities within the jurisdiction of the permittees.*

Spill Prevention is addressed by the Fort Worth Fire Department's (FWFD) Fire Prevention Bureau. The City of Fort Worth has two primary programs to address spills that may impact the MS4. The FWFD has a hazardous materials (HazMat) Squad to address major incidents and EQD has a response team to address minor incidents.

3.11.1 FWFD Prevention Program

The FWFD has 44 fire stations throughout the city with plans for additional stations. The firemen routinely inspect each business and institution in their areas for fire hazards, outdated fire extinguishers, and improperly stored hazardous materials. When hazards are identified, the responsible party is given a specified amount of time to correct the violation. Officers with the FWFD Fire Prevention Bureau also inspect institutions, business, and industries concentrating on areas where hazardous materials are kept including aboveground/underground storage tanks. Complaints are also investigated.

3.11.2 FWFD Response Policy

The City of Fort Worth was one of the first communities in Texas to establish a HazMat squad in its fire department. Currently, the FWFD has one main HazMat squad stationed downtown, in the center of the city, with four satellite squads stationed in other sectors of the city. All squad members are thoroughly trained and properly equipped to respond to any hazardous material incident.

When a spill is reported via the City's 911 system, both the station nearest the incident and the HazMat squad are dispatched. The squad uses their on-board computer to begin researching the spilled material and its characteristics and constituents, if known, while enroute to the scene. Frequently, a tentative plan of action is developed by the time the squad has arrived on scene and the squad will have notified Alarm Dispatch to contact other city departments with anticipated personnel and resource requests. FWFD uses an integrated incident command system with other departments and outside personnel reporting to the Incident Commander upon arrival to the scene.

3.11.3 Environmental Quality Spill Response Program

EQD spill response tasks are integrated into the department's surface water quality group during normal business hours, with assistance from other groups that rotate after hours on-call shifts.

EQD maintains the ability to handle spills of both hazardous and non-hazardous materials of up to 50 gallons and the City continues to keep two private environmental response firms under contract to remediate larger spills when required.

EQD field staff is empowered to enforce City Code and as such, can require remediation of any spill when a private entity is identified as the responsible party. In a typical incident, the responsible party is issued a written Notice of Violation (NOV) and given a specific amount of time, appropriate to the type and amount of material

spilled, to remediate the spill. If the directives of the NOV are not followed, a criminal citation may be issued and one of the City's contractors will be called in to remediate the spill if necessary. The responsible party may then be billed for the contractor's services. Failure to pay the bill may result in a civil suit being filed by the City Attorney's Office.

4.0 Pollution Prevention and Good Housekeeping for Municipal Operations

The permittees shall continue to implement a pollution prevention and good housekeeping program for municipal operations. The program must include MCMs that address:

- 1. 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;*
- 2. reduction of discharge of pollutants to the MEP from road repair, equipment yards, material storage facilities, or maintenance facilities;*
- 3. training for all employees responsible for municipal operations which includes information on preventing and reducing stormwater pollution from all municipal operations subject to this MCM; and*
- 4. within one year from the date of permit issuance, implement a program for structural control maintenance.*

"Urban Subwatershed Restoration Manual No. 9, Municipal Pollution Prevention/Good Housekeeping Practices", published by the Center for Watershed Protection; training materials developed by NCTCOG; and other resources as appropriate are used to evaluate pollution prevention potential of existing procedures, implement new good housekeeping measures and BMPs where needed, and develop targeted training programs for all employees responsible for municipal operations subject to this MCM.

4.1 Pollutant Runoff from Municipal Operations

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;

Current street maintenance practices and street sweeping activities are described in Section 1.5. The City continues to evaluate these good housekeeping practices and BMPs for revisions and updates as necessary to reduce pollutant runoff potential.

Minimum control measures for Park and Recreation Department park maintenance programs will also be reevaluated. The Parks Department currently sponsors an Adopt-a-Spot Program similar to TxDOT's Adopt-a-Highway program, which includes Adopt-a-Park, Adopt-a-Median, and other iterations.

The City maintains a contract for recycling of paper and other recyclable materials from municipal office buildings.

4.2 Reduction of Pollutant Discharge

Reduction of discharge of pollutants to the MEP from road repair, equipment yards, material storage facilities, or maintenance facilities;

Discharge of pollutants from road repair disturbing an area of one acre or greater or a common plan of development that is an acre or greater will be controlled through BMPs established as part of the required construction permitting (TXR150000). For road repair disturbing less than an acre and for routine maintenance activities that do not require permitting, guidelines will be established to reduce the discharge of pollutants to the MEP. For equipment yards, material storage facilities, and maintenance facilities, site specific BMP manuals may be established to aid in reducing pollutant discharge.

4.3 Employee Training

Training for all employees responsible for municipal operations which includes information on preventing and reducing stormwater pollution from all municipal operations subject to this MCM

Employee training is based primarily on materials, developed by NCTCOG, which target specific municipal operations. This program includes web based instruction, printed materials, and videos. Other commercially available programs or materials produced in-house are being explored and may also be used.

4.4 Structural Control Maintenance

Within one year from the date of permit issuance, implement a program for structural control maintenance

Employee training is based primarily on materials, developed by NCTCOG, which target specific municipal operations. This program includes web based instruction, printed materials, and videos. Other commercially available programs or materials produced in-house are being explored and may also be used.

4.5 Waste Handling

The permittees shall ensure that waste removed from the MS4 or from other municipal operations is properly disposed.

The procedures for storm drain system maintenance summarized in Section 1.1 will be reviewed and revised as necessary to ensure proper disposal of wastes removed from the system. The City maintains a contract for recycling of used oil and other fluids collected as a result of equipment maintenance activities. Contracts are also held with waste disposal contractors for proper disposal of wastes including but not limited to, hazardous, non-hazardous, special, and solid wastes; a variety of lights including high pressure sodium high-intensity discharge (HID) lamps, incandescent bulbs, fluorescent lamps and tubes, vapor lamps, and metal halide HID lamps; light ballasts which may contain polychlorinated biphenyls (PCBs); electronic waste; U.S. Department of Agriculture (USDA) regulated garbage; and biohazardous materials. Personnel from EQD oversee these waste disposal activities and ensure that wastes are properly stored, prior to transportation to the approved disposal facility, to prevent discharge of pollutants into the environment.

4.6 Pesticide, Herbicide, and Fertilizer Application

The permittees shall continue to implement controls to reduce the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers, by their employees or contractors, to public right-of-way, parks, or other municipal property. If the permittees have jurisdiction over lands they do not directly own (e.g. incorporated city), they shall implement programs to reduce the discharge of pollutants related to the commercial application and distribution of pesticides, herbicides, and fertilizers on those lands.

Currently, staff from the Parks and Recreation Department applies pesticides, herbicides and fertilizers on city owned property. In addition, TPW Stormwater has an herbicide-spraying program to minimize vegetative growth in storm drainage channels. Selected ditches are sprayed once to twice per year. Plants such as cattails and young willow trees are specifically targeted, as they are especially disruptive to the flow of stormwater. To prevent contamination of these storm drains, only products that are USEPA approved for application in and around waterways are used. The main cause of pesticide/herbicide/fertilizer problems in waterways concerns proper use and disposal of the products. To assure that these products are used correctly, City staff and contractors must all be properly licensed by the State of Texas Structural Pest Control Board to participate in any spraying program.

4.7 List of Municipal Facilities

The SWMP must include a list of all 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.

The City maintains a list of all city owned or leased properties. This list serves as the basis for a list of municipal facilities subject to the other components of this MCM. The list is maintained in Microsoft Excel or Access format and in the City's Geographic Information System (GIS) database and may include tracking mechanisms for training, waste disposal, and other program elements.

4.8 TRWD Program

TRWD will explore good housekeeping practices at all District owned facilities. Pollution prevention measures will be evaluated at District owned operations facilities and locations where materials may be stockpiled. Necessary improvements will be made to reduce pollutant load from facilities owned by TRWD. Annual training for operations employees will be implemented to make them aware of pollution prevention practices in the field and at maintenance facilities.

5.0 Industrial & High Risk Runoff

The permittees shall continue to improve their existing programs to identify and control pollutants in storm water 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 to be contributing a substantial pollutant loading 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 B.2.h.iii of this permit.*

The City of Fort Worth has an established Industrial and High Risk Runoff program to identify and evaluate facilities that have a higher potential to negatively impact stormwater quality. A majority of the facilities identified in this section are governed by the monitoring, reporting, and inspection requirements of their own TPDES or NPDES stormwater permits. The stormwater leaving these sites ultimately reaches the City of Fort Worth's storm drain system and as such, the quality of this water must be in compliance with the goals contained in the City's MS4 TPDES stormwater permit. To ensure that this is the case, the plan outlined below details the priorities and procedures for inspections and for establishing compliance for these facilities by the City of Fort Worth.

5.1 Priorities & Procedures for Inspecting and Monitoring High Risk Runoff Facilities

EQD performs stormwater inspections of municipal landfills; treatment, storage, or disposal facilities for municipal waste; hazardous waste treatment, storage, or recovery facilities, and facilities subject to Emergency Planning and Community Right to Know Act (EPCRA) Section 313 that are subject to TPDES permitting, are performed, at a minimum, at least twice during the five-year term of the TPDES stormwater permit. Priorities for future inspections are established for a facility based on a number of factors including but not limited to, complaints received, facilities operating outside the requirements set forth in their TPDES permit, facilities identified as operating without a permit, violations where exposure of contaminants are or have affected human health or serious impact to the environment, a facility being noted as contributing a substantial pollutant load to the MS4, or other deviations or violations are noted. Inspection frequency will be adjusted to encourage compliance and to encourage the facility to eliminate any noted discharges to the MS4.

During an inspection of a municipal landfill; treatment, storage, or disposal facility for municipal waste; hazardous waste treatment, storage, or recovery facility and facilities subject to EPCRA Section 313, standard inspection procedures are followed to ensure a thorough and accurate inspection is conducted. A typical stormwater inspection includes an examination of surface drainage and pathways by which chemicals and other potential pollutants could contaminate stormwater runoff; the function of structural BMPs (if any); the adequacy of maintenance of the BMPs; the availability of maintenance and stormwater monitoring records, the use and effectiveness of any nonstructural BMPs employed; the written procedures by which internal inspections and stormwater samples are collected and handled; and a Stormwater Pollution Prevention Plan (SWPPP) review.

Checklists and inspection forms have been developed to ensure consistency and accuracy in inspection reporting and recordkeeping. These forms will be reviewed and updated as necessary to ensure permit compliance. An initial inspection conducted at a facility will typically include a comprehensive inspection of the facility, BMPs, and the facility's SWPPP as detailed above. If deficiencies or discrepancies are noted, the facility could be issued an 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 an opportunity to come into compliance in a time frame designated by the inspector (30 days or less or at the next required/eligible event). Follow up inspections are conducted to verify that the items noted in the violation or citation have been corrected and that no other new concerns are found. Future inspections will be prioritized as detailed above.

Industrial facilities that the City of Fort Worth determines to be contributing a substantial pollutant load to the MS4 are identified through monitoring, complaint investigations, and/or historical data. Facilities required to obtain permit coverage under the Multi-Sector General Permit (MSGP), or other applicable permit for industrial discharges, are required to comply with all inspection, monitoring, and reporting schedules as required by the permit. Additionally, all industries that are required by their TPDES industrial stormwater permit to conduct benchmark monitoring are requested to submit the results of this monitoring to the City of Fort Worth or it is collected at the time of inspection. Any of these facility types that are not regulated by a TPDES or NPDES permit but that are determined to be contributing 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 City of Fort Worth.

Inspection results and monitoring data are reviewed by EQD personnel who then determine if corrective and enforcement actions are needed. If the City is unable to bring the facility into compliance after following the procedures outlined in its Enforcement Policy, EQD will inform the TCEQ Region 4 investigation team and/or the EPA Region 6 Enforcement Division to further encourage compliance.

5.2 Industrial & High Risk Monitoring Program

The details regarding these requirements are contained in Section 5.1.

This MCM is not applicable to TRWD as no industrial sites are located in the District's Fort Worth floodway.

6.0 Construction Site Stormwater Runoff

- i. 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. The permittees shall continue to 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.*

- ii. *This MCM must include:*
 - A. *requirements to use and maintain 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;*
 - C. *Requirements for inspection of construction sites and enforcement of control measure requirements;*
 - D. *Requirements for the permittees to provide appropriate education and training measures for construction site operators;*
 - E. *notifications 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 that incorporate consideration of potential water quality impacts;*
 - G. *Procedures for receiving and considering input received from the public;*
 - H. *Procedures for site plan review of sediment and erosion plans; and*
 - I. *A description of a program to implement and maintain structural and non-structural BMPs to reduce pollutants in stormwater runoff from construction sites to the MS4, which must include a description of the following:*
 - a. *Procedures for site planning which incorporate consideration of potential water quality impacts;*
 - b. *Requirements for nonstructural and structural best management practices;*
 - c. *Procedures for identifying priorities for inspecting sites and enforcing control measures that consider the nature of the construction activity, topography, and the characteristic of soils and receiving water quality; and*
 - d. *Appropriate educational and training measures for construction site operators.*

The City of Fort Worth and its Co-Permittee have an established Construction Site Stormwater Runoff program designed to reduce the discharge of pollutants in to the MS4 from construction sites that are one or more acre(s) in size or that are part of a larger common plan of development or sale that is one or more acre(s) in size. Section §12.5-302(a) of the City Code prohibits discharges of pollutants into the MS4 from all sources, including construction sites. EQD has an active TPDES construction site inspection program utilizing the Water Quality Team. Enforcement of control measure requirements is through Section §12.5-334 of the City Code giving inspectors the ability to enforce NPDES/TPDES regulations.

6.1 Activities operated by the City of Fort Worth or its contractors, or within its jurisdiction

- A. *Requirements to use and maintain appropriate erosion and sediment control BMPs to reduce pollutants discharged to the MS4 from construction sites;*

Activities operated by the City of Fort Worth and its contractors are governed by the same regulations, ordinance, and requirements that are required of any other project performed within the jurisdiction of the City. These requirements are detailed further in Section 2.1. Additionally, City of Fort Worth Standard Construction Specifications (specifically Section 01 57 13) requires all activities operated by the City of Fort Worth

and its contractors to reduce discharge of pollutants from construction sites via compliance with the TPDES Construction General Permit.

- 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;*

In a July 2011 revision of the City of Fort Worth Standard Construction Specifications, Section 31 25 00 (Erosion and Sediment Control) was revised to require site operators to address the control of site wastes required by this MCM. Section 31 25 00, Part 3 - Execution, 3.4 - Installation, B. Control Measures, 2 states that measures shall be in place to “Control site waste such as discarded building materials, concrete truck washout water, chemicals, litter and sanitary waste at construction site.”

- C. *Requirements for inspection of construction sites and enforcement of control measure requirements;*

There are on average, approximately 500 active construction operations in Fort Worth at any given time. EQD inspectors perform inspections at these sites. The inspectors visit each site, on average, once per month for routine inspections of BMPs and compliance with the TPDES Construction General Permit and inspect sites more often as needed when corrective actions are required. The inspectors maintain records on site conditions observed during the inspections and keep files for all violations noted. Through ordinances adopted by the City of Fort Worth, construction sites in the city are required to perform construction activities in accordance with applicable TPDES permits. Requirements regarding the use and maintenance of control measures during construction are clearly addressed in the TPDES Construction General Permit. Additionally, it is an enforceable offense to introduce any discharge to the MS4 that is not composed entirely of stormwater. This applies to all construction sites whether or not regulated by a TPDES discharge permit. As the City Code makes it clear that discharges such as silt and sediments from construction sites are not allowed to enter the storm drain system, the City feels that it is unnecessary to state specific requirements for BMPs (both structural and nonstructural). As each construction site is unique, and areas within each site are unique, we feel that the site’s engineers are in a much better position to decide what BMPs to use. When illicit discharges occur, City inspectors take appropriate enforcement actions specifying the amount of time for the site to make corrections.

- D. *Requirements for the permittees to provide appropriate education and training measures for construction site operators;*

Education and training activities are performed for City of Fort Worth staff and contractors that oversee and/or inspect construction projects for the City of Fort Worth. Staff are trained on the general requirements of the TPDES Construction General Permit and general stormwater management practices.

The City of Fort Worth participated with the cities of Dallas, Arlington, Irving, Garland, Mesquite, and Plano in assisting 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 or Notice of Termination (NOT) filing. This course is designed for use by municipal inspectors, site owner/operators and general construction site personnel and offered through NCTCOG. All EQD construction site inspectors are required to take this course. In addition, the City has held similar workshops for City employees from all departments associated with construction activities. The City's TPDES construction inspectors give educational programs to organizations as requested. In addition, inspectors hosted TPDES Construction General Permit Renewal Workshops in 2018 to provide an overview of the changes to the TXR150000. These programs are designed to familiarize the site operators with NPDES/TPDES and local regulations. We will continue to give these programs and seminars when requested. EQD also has a simple brochure that explains the basic requirements and illustrates a few example BMPs. These brochures are typically given out at these seminars in addition to other literature as available. Additional educational information on construction stormwater management is also available through the City of Fort Worth's website.

- E. *notifications to construction site operators of their potential responsibilities under the NPDES or TPDES permitting regulations and permits for construction site runoff;*

Notification to construction site operators performing work in the City of Fort Worth is provided through pre-development meetings and pre-construction conferences as well as City of Fort Worth Standard Construction Specifications (specifically Section 01 57 13). All activities operated by the City of Fort Worth and its contractors or being performed in its jurisdiction are required to reduce discharge of pollutants from construction sites via compliance with the TPDES Construction General Permit.

EQD inspectors are a part of the City's grading permit review process requiring TPDES documents to be submitted and reviewed prior to approval. Inspectors visit these sites when construction activities commence to ensure the TPDES/NPDES regulations are being followed.

- F. *procedures for site plan review that incorporate consideration of potential water quality impacts;*

Site plans are reviewed through the development process for conformance with the 2015 version of the City's Stormwater Criteria Manual. SWPPPs are evaluated by City construction stormwater inspectors during the inspection process discussed in this MCM. In 2012, Fort Worth adopted a grading ordinance, § 12.5-876, requiring a grading permit for most land disturbances greater than 1.0 acres and conformity with the latest iSWM manual.

- G. *procedures for receiving and considering input received from the public;*

The City of Fort Worth has a number of avenues to receive information submitted by the public including concerns related to construction sites. These processes are detailed in Section 7.2, Public Involvement and Participation. When a call or email is received directly or through the environmental hotline, an inspector is notified and evaluates the concern

within one business day. If requested, the inspector will follow-up with the caller to relay the findings and next steps (if any are necessary).

H. procedures for site plan review of sediment and erosion plans; and

All projects that disturb 1.0 acres of land are required to obtain a grading permit. EQD has a checklist of items that are required to be submitted for environmental review and approval prior to issuance of the grading permit. The EQD review includes evaluation of submitted sediment and erosion plans. During the construction phase, EQD inspectors work with site operators to ensure that the selected sediment and erosion control BMPs are effectively controlling sediment on-site.

I. a description of a program to implement and maintain structural and non-structural BMPs to reduce pollutants in stormwater runoff from construction sites to the MS4, which must include a description of the following:

- 1) Procedures for site planning which incorporate consideration of potential water quality impacts;*
- 2) Requirements for nonstructural and structural best management practices;*
- 3) Procedures for identifying priorities for inspecting sites and enforcing control measures that consider the nature of the construction activity, topography, and the characteristics of the soils and receiving water quality; and*
- 4) Appropriate educational and training measures for construction site operators.*

All land disturbing activities greater than 1.0 acre are required to obtain an approved iSWM plan. The iSWM process makes considerations for water quality impacts. Additionally sites that are adjacent to TRWD property have specific requirements for nonstructural and structural best management practices for water quality. Post-construction BMPs are required to be maintained by the operator. The city may also choose to incorporate BMPs to be maintained by the City. During construction BMPs are to be inspected and maintained by the site operators, however EQD inspectors can use enforcement techniques to ensure that neglected, insufficient, or failed BMPs are maintained. Inspection of sites is performed on a regular basis, however some sites may be inspected more frequently based on site conditions, complaints, and proximity to receiving waters. Educational and training materials are available on the EQD website, as well as provided to operators during inspections, and handed out at workshop events.

6.2 Activities operated by TRWD or its contractors

Construction activities in the TRWD floodway are required to have TRWD permits that address stormwater controls for the construction site. TRWD has also developed additional criteria specific to construction on the floodway. Included in these criteria are guidelines for post-construction grass establishment and erosion protection utilizing cabled articulating revetment systems. All construction plans will be reviewed for concrete washing practices, sanitary waste collection and disposal, and trash control measures. Permitted construction sites are inspected and monitored by TRWD staff according to USACE and the City's regulations and ordinances. These inspectors have been trained through the NCTCOG Development Management Subcommittee Regional

Urban Stormwater Management Task Force. Any violations that do not comply with TRWD requirements are forwarded to appropriate authorities such as the City or USEPA.

6.3 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 a 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 discharge permit for construction activities (if known).

The City of Fort Worth maintains a database containing a list of operators and construction sites that are located within the city limits of the City of Fort Worth. This database contains the name, location and permit number issued by the TCEQ that authorizes stormwater discharges from construction activities. This database is continually updated for new construction sites and sites that have completed operations and reached final stabilization.

6.4 Site Controls, plan review, and training

The permittees shall ensure and demonstrate that this MCM includes the following elements, in addition to those listed above:

- A. *The permittees shall require construction site contractors to implement appropriate erosion and sediment control BMPs (A1) and control waste such (for example, discarded building materials, concrete truck washout water, chemicals, litter, and sanitary waste) at the construction site that may cause adverse impacts to water quality (A2).*

- A1. *The permittees shall require construction site contractors to, at a minimum, implement appropriate erosion and sediment control BMPs.*

This task has been performed by City of Fort Worth staff since the program's inception. This has been accomplished via ordinance that requires operators of construction sites to have a NPDES or TPDES permit to discharge stormwater. Additionally, the ordinance requires these facilities to operate in strict compliance with the requirements of its NPDES or TPDES permit. These permits require operators to have appropriate erosion and sediment control BMPs.

- A2. *The permittee shall require construction site contractors to, at a minimum, control waste such as discarded building materials, concrete truck washout water, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.*

This requirement is accomplished through the control requirements contained within the TPDES construction general permit and City of Fort Worth ordinance, Part II, Appendix B, Article II, Division 3, Subdivision A Section § 11A-27 & 28.

“Construction sites within the city and sidewalks, streets, alleys and public or private properties in the vicinity of the construction sites shall be maintained free of construction trash, litter and debris that is not securely contained.”

- B. *The permittees shall develop procedures for site plan reviews that incorporates consideration of potential water quality impacts (B1); receipt and consideration of information submitted by the public (B2); and site inspection and enforcement of control measures to the extent allowable under state and local law (B3).*

B1. Site Plan Review that incorporates consideration for potential water quality impacts

Please see 6.1.F above for details regarding this requirement.

B2. Receipt and consideration of information submitted by the public.

See Section 6.1.G for details regarding this requirement.

B3. Site inspection and enforcement of control measure to the extent allowable.

See Section 6.1.C for details regarding this requirement.

- C. *The permittee shall ensure that all staff whose primary job duties are related to implementing the construction stormwater program (including permitting, plan review, construction site inspections, and enforcement) are informed or training to conduce these activities. The training may be conducted by the permittee or by outside trainers.*

EQD inspection staff are required to attend the NCTCOG Construction Stormwater Inspector class. Each inspector also is required to complete a city designated training program that covers the TPDES permit, City of Fort Worth ordinances, enforcement procedures and the escalation process. Additional training is provided as opportunities are presented. Staff also participate in NCTCOG stormwater committees and are encouraged to take advantage of workshops, conferences, and webinars.

7.0 Public Education, Outreach, Involvement, and Participation

7.1 Public Education and Outreach

- A. *The permittees shall document and ensure that the SWMP promotes, publicizes, and facilitates public education and outreach 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 shall 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.*

Environmental Quality staff coordinate the compilation of records of outreach by city staff including quantities of literature and promotional items distributed, records of media contacts, public speaking engagements, events and meetings attended, etc., that reach residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.

B. *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;*

- The City of Fort Worth has number of avenues to receive information submitted by the public concerning the conditions and activities conducted at a construction site. One method is by calling the Environmental Hotline or the City Call Center at 817-392-1234, where during business hours the caller will be routed to someone to report their concern. During non-business hours the call is routed to voicemail where it is received the next business day. When a call is received, an inspector is notified and evaluates the concern. If requested, the inspector will follow-up with the caller to relay the findings and next steps, if any are necessary. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
- Another method of reporting concerns is through the City of Fort Worth's web site where violations are reported online. After completing the web form, an email notification is sent to staff who initiate an investigation of the concern reported. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
- The Hotline information is frequently included in both internal and external print and online city communications publications. Items submitted to these communication publications are then frequently posted on social media sites by the City of Fort Worth's Office of Media and Public Affairs. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
- Community Engagement Liaisons present programs, updates and provide materials about water quality topics, including litter as a stormwater quality component, the Hotline, and household hazardous waste to groups, associations, events including some tradeshow and conventions, schools, and meetings. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
- The EQD web site includes links to regional, state, and federal resources for information about reporting of illicit discharges or improper disposal of materials, including floatables, into the MS4. Residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel are all served by this information.

- The City of Fort Worth actively participates in city-driven and partner-driven anti-litter campaigns. One recently-introduced message is “Still Littering, Seriously?” Targeted groups for this message include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
- For a number of years curb marking was used to discourage dumping into storm drain inlets. Curb inlet markers have evolved to contain unique identifiers and contact information to aid in reporting of illicit discharges and improper disposal into the MS4. Those marking continue to exist as an avenue of educational awareness and may be continued by the City in the future. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel. EQD can distribute curb markers to school groups or homeowners associations to put out as part of an educational program on request.
- TRWD promotes an Adopt-an-Inlet Program where drains can be adopted to be regularly cleaned. The adopter gets to put a custom message on a curb marker to recognize their efforts. The program website is adoptadrainfw.com. Groups served include residents, visitors, businesses, commercial and industrial facilities, schools, groups, and clubs.
- EQD’s web site 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. The same comprehensive information is provided for industrial multi-site permits, and for commercial power-washing permits. Groups served include businesses, commercial and industrial facilities, and construction site personnel.
- Inspectors distribute informational literature and items on an as-needed or requested basis to businesses and industries as part of ongoing personal contact and relationship building. Inspectors and other staff present at conferences and meetings when requested. Groups served include businesses, commercial and industrial facilities, and construction site personnel.

2. the proper management and disposal of used oil and household hazardous wastes;

- The City of Fort Worth’s award-winning ECC and mobile collection program are the cornerstones of the hazardous waste disposal education and outreach programs. The ECC and mobile collection program collect hazardous waste from the residents of Fort Worth and more than fifty other government entities. Approximately 25 percent of that waste is recycled annually. Groups served include residents, visitors, and public service employees. The City’s four drop off locations now accept household hazardous waste. Waste received at the drop off locations is managed by ECC staff.
- The Crud Cruiser schedule is posted on the Environmental Collection Center’s web site and is distributed through neighborhood associations and community groups through the Community Engagement Office. Groups served include residents, visitors, and public service employees.

- The ECC is a prominent feature on multiple city web pages including EQD, Solid Waste, and during the mobile collection season, on the city’s main page. Groups reached through this effort include residents, visitors, and public service employees.
 - The ECC is frequently promoted in both internal and external print and online city communications publications. Items submitted to these communication publications are frequently posted on social media sites by the Office of Media and Public Affairs. Groups served include residents, visitors, and public service employees.
 - Links to regional, state, and federal resources for information and educational materials about hazardous waste disposal are included on EQD web pages. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
 - The City has trademarked a set of cartoon characters called Captain Crud and the Cruddies, which are used by Fort Worth and participating cities in advertising campaigns and educational materials to promote the ECC and proper disposal of hazardous household waste. Groups reached include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
 - Community Engagement Liaisons present programs and updates about water quality topics, including proper disposal of hazardous household wastes, to groups, associations, events including conventions, schools, and meetings. The liaisons use Captain Crud & the Cruddies activity guides for grades Kindergarten through fourth grade. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
 - When possible, EQD works with Code Compliance, Solid Waste and Recycling, the Water Department, Keep Fort Worth Beautiful, and Stormwater Management Division within the City and other regional groups in North Texas to create cooperative messages that promote healthy watersheds and litter reduction. Groups reached in these efforts include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
3. *the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors.*
- Home and landscape pollution topics, tips, and features are frequently promoted in both internal and external print and online city communications publications. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
 - Informational literature and items promoting proper use and disposal are distributed by Community Engagement Liaisons at events and meetings in around the city. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.

- Community Engagement Liaisons present programs and updates about water quality topics to groups, associations, events, schools, and meetings, reaching residents, visitors, public service employees, businesses, commercial and industrial facilities, construction site personnel.
- When possible, EQD works with Code Compliance, Solid Waste and Recycling, the Water Department, Keep Fort Worth Beautiful, and Stormwater Management Division within the City and other regional groups in North Texas to create cooperative messages about the proper use and disposal of these chemical applications. Groups reached by this message include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
- Inspectors distribute informational literature and items on an as-needed or requested basis to businesses and industries as part of ongoing personal contact and relationship building. Inspectors and other staff will also present at conferences and meetings as requested. Groups served include businesses, commercial and industrial facilities, construction site personnel.

7.2 Public Involvement and Participation

The permittees shall continue to 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.

- EQD has the SWMP available online at <http://fortworthtexas.gov/env/stormwaterquality/swmp/> and available at EQD offices on the 7th floor of the City Hall Annex at 908 Monroe Street. A direct email address is available to allow for residents and businesses to ask questions or voice concerns about the SWMP. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
- EQD staff members currently serve on boards or are members of several committees of NCTCOG's Regional Stormwater Management Program; including the Regional Stormwater Management Program Coordinating Council, Illicit Discharge Determination and Elimination Task Force, the Pollution Prevention Task Force, and the Stormwater Public Education Task Force. Other staff members serve on various committees on regional and state levels. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
- The Fort Worth Chamber of Commerce and Downtown Fort Worth, Inc. both have a number of boards and committees consisting of business personnel through which outreach and advice regarding stormwater quality can be achieved. Groups served include residents, visitors, public service employees, businesses, commercial and industrial facilities, and construction site personnel.
- The Fort Worth Business Assistance Center (BAC), a division of the Economic Development Department of the City of Fort Worth, provides information and resources for small business owners about city ordinances and requirements.

Groups served include businesses, commercial and industrial facilities, and construction site personnel.

- The Community Engagement Office, which is part of the City Manager's Office, regularly meets with homeowner and neighborhood associations and other civic groups in all sectors of the city to provide information and education and return feedback to city departments on issues of concern. Groups served include residents, public service employees, businesses, commercial and industrial facilities, and construction site personnel.

7.3 TRWD Activities

TRWD has three 24-hour telephone numbers for complaints. These numbers are published in homeowners' newsletters and on all District Western Division publications. TRWD makes bacteria data collected on the Trinity River publicly available on its web page. TRWD currently collects *E. coli* data at eleven locations on a routine basis. TRWD provides resources and access to schools for programs like Major Rivers and WaterWise. TRWD is an active member in Fort Worth Independent School District programs such as Waterama and Adopt-A-School. TRWD staff currently visit schools and community groups to conduct guest lectures and presentations. The water district's education initiatives has produced interactive community kiosks and student workbooks featuring topics like water conservation, water quality, and recycling water through wetlands. Several regional cleanups are held annually to gather litter from watersheds and spread information on water pollution prevention. TRWD also offers a program for community groups and businesses to cleanup sections of the Trinity River, called Adopt-A-River. TRWD speaks at meetings for the non-profit Save Eagle Mountain Lake, Inc. and acts as a technical advisor. Recognizing the idea that trash and floatables are much easier to clean up when properly disposed of on land rather than attempting to collect at the end of pipe, TRWD initiated a major campaign called Reverse Litter. The District developed the program in 2012, and has gained the support and partnership of Fort Worth, Arlington, Mansfield, Denton and Dallas. The major focus of the campaign is to increase awareness about litter, its effect on our waterways, and to call people to take action to help keep our lakes and rivers clean.

8.0 Monitoring, Evaluation, and Reporting

The permittees shall continue to implement, and modify as necessary, the following monitoring and screening programs for dry weather, wet weather, and industrial and high risk runoff:

8.1 Dry Weather Screening Program

This program shall continue the permittee's/permittees' 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 requires to conform to the requirements of Part V, Section B.2. of this permit, "Test Procedures."

The objectives of this program are to continue ongoing efforts to detect the presence of illicit discharges and assess dry weather water quality changes. Analyses performed include air and water temperature, pH, color, turbidity, copper, ammonia, phenols, chlorine, specific conductivity, and detergents. Observational characteristics including odor, oil sheen, surface scum, sewage, and flow are noted. A colorimetric meter that measures pollutants in parts per million is used for the analysis of copper, phenols, ammonia and chlorine. The methylene blue active substances (MBAS) method is used for detergent analysis. Portable meters are used to measure pH, specific conductivity, and turbidity. Tests and observations are performed twice in a 24-hour period, separated by a minimum of four hours, to increase the potential to detect illicit flows. Also, sampling and analyses are only conducted when there has been no significant precipitation (less than 0.10 inch) within 48 hours.

Priorities for follow-up screening of outfalls rely on a number of factors such as past history of illicit discharges, number of citizen complaints, potential pollutant sources, and experience of field staff, etc.

Pollutant Trace Back

When screening results indicate the possible presence of illicit flow field staff begin a trace back investigation of the pollutants of concern within the MS4. A variety of investigative tools, such as additional DWFS, watershed reconnaissance, video camera in the storm drain lines, dye tracing, and tunnel entries, etc., may be used in follow-up activities as appropriate for each situation. Trace back to a responsible party will require them to eliminate the discharge. If elimination of the discharge is not possible within 30 days, then a schedule for elimination must be provided. Increasing enforcement actions may be taken as appropriate.

8.2 Wet Weather Screening Program

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 must:

- 1. Screen the MS4, as specified in the SWMP; and*
- 2. Specify the sampling and non-sampling techniques to be used for current screening and also for follow-up screening.*

Sample collection and analysis for the Wet Weather Screening Program is not required to conform to the requirements of Part V, Section B.2. of this permit, "Test Procedures." However, samples taken to confirm (e.g. in support of proper legal action) a particular illicit connection or improper disposal practice must conform to the requirements of Part V.B.2.

The purpose of the Wet Weather Screening Program is to address areas that may be contributing excess levels of pollutants to the MS4 during storm events. Each year, at least 50 runoff samples are collected and analyzed. Locations are selected based on past

or previous history, information gathered during dry weather field screens, or other field reconnaissance, industrial monitoring data, information obtained from industrial or construction inspections, or other program emphases. Samples may be collected in-stream, from outfalls, curbs, open ditches, pipes, sheet flow, or other appropriate locations. Sample locations may be clustered within small sub-watersheds to thoroughly characterize the runoff and isolate areas of particular concern, or may be individual locations scattered throughout the City. Samples are collected from runoff resulting from a rain event that is greater than 0.10 inch in magnitude and that occurs at least 72 hours after the last measurable rain event. The greater than 0.10 inch rainfall guideline may be waived during drought conditions. Sample analyses will consist of, at a minimum, pH, specific conductivity, and turbidity. Additional analyses which may be performed include, but are not limited to ammonia-nitrogen, nitrate-nitrogen, phosphate, chromium, copper, zinc, total coliform, and *E. coli* bacteria. The selection of additional analyses to be performed will be determined by senior personnel on a case-by-case basis based upon land use and potential pollutants present in the sampling area. The data will be reviewed to determine what follow-up activities, if any, should be conducted. Summary statistics for each parameter and results of any follow-up activities are presented in the Annual Report.

8.3 Industrial and High Risk Runoff Monitoring Program

A. *This program must include monitoring for 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 EPCRA Title III, Section 313; and any other industrial or commercial discharge the permittees determine are contributing a substantial pollutant loading to the MS4.*

1) *This program must include an inspection program to look closely at the activities of facilities capable or discharging industrial and high-risk runoff to the MS4. The inspection plan must identify the facility, risk level, and inspection schedule.*

For sites that are determined to be high risk, the inspection frequency is twice per permit term. High-risk is defined as municipal landfills, treatment, storage, and disposal facilities, hazardous waste treatment storage, disposal and recovery facilities, facilities that are subject to EPCRA Title III Section 313, facilities with poor compliance history, and those that are determined to be contributing a substantial pollutant loading to the MS4. Facilities located within the City of Fort Worth are organized in an online inspection and facility tracking software, or other similar program. Facilities can be marked as high-risk and inspections are scheduled accordingly and assigned to an investigator. The City of Fort Worth reviews data collected by these facilities as part of their TPDES TXR050000 permit.

B. *The Industrial and High Risk Runoff Monitoring program must include the collection of quantitative data on parameters that 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. TXR050000 or any applicable general permit issues*

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 the storm water discharges from that facility; and*
 - 3. include pollutants of concern for the stormwater discharge from that facility as identified by the permittees.*
- C. To avoid the duplication of efforts, the permittees may review data collected by a facility as required by any state or federally issued individual permit or general permit authorization for that facility rather than performing additional sample collection and analysis.*
- D. In lieu of the monitoring discussed above, the permittees may accept a “no exposure” certification from a facility, which certifies that raw and waste materials, final and intermediate products, by-products, material handling equipment or activities, industrial machinery or operations, or significant materials from past industrial activity are not presently exposed to storm water and are not expected to be exposed to storm water for the certification period. Where a permittees accept a “no exposure” certification, the permittees shall conduct site inspections of the facility not less than once per permit term OR to verify the “no exposure” certification; the permittees may waive this inspection for those facilities which participate in the TCEQ's Small Business and Local Government Assistance Compliance Commitment (C2) Program.*
- E. The permittees may also waive monitoring requirements under this permit for facilities that they determine are compliant with the TPDES Multi-Sector General Permit No. TXR050000.*

To satisfy the Industrial and High Risk Runoff Monitoring permit requirement, the City requires industries with benchmark monitoring requirements under the MSGP for stormwater discharges related to industrial activity to submit their monitoring results to the City.

Each year the City sends notices to all facilities on file with a benchmark monitoring requirement, reminding them of their reporting requirement to TCEQ and requesting that a copy of the report be sent to EQD. Additionally during facility inspections, monitoring results are reviewed for benchmark monitoring, metals monitoring, and visual monitoring.

8.4 Storm Event Discharge Monitoring

The permittees shall comply with the monitoring requirements in Part IV of this permit in order to characterize the discharge from the MS4.

The City of Fort Worth and its co-permittee, TRWD, have chosen to comply with Permit Part IV.A.1 monitoring requirements through the approved North Central Texas Regional Wet Weather Characterization Program (RWWCP) including the Representative Rapid Bioassessment Monitoring option.

8.5 Floatables Monitoring

The permittees shall implement a floatables program as described in Part IV, Section B of this permit.

Permit Part IV.B requires the co-permittees to establish and maintain two monitoring locations for removal of floatable material in discharges to or from the MS4. In compliance with this requirement, TRWD has established and maintains two floatables collection devices on the Clear Fork Trinity River.

The floatable debris collectors were established in 2006 at two separate locations along the Clear Fork Trinity River. Two collectors were installed across from the Clear Fork Pump Station under Rosedale Street. The nets in the initial collectors could not withstand rodent activity, and have since been replaced with an angled boom that traps floatables and directs the trash near shore where it can easily be removed from the waterway. A second set of collectors was installed at the outfall of sump #19 where all water entering the main river must pass through the unit. The collector consists of 8 large metal cages steel mesh baskets that trap floating debris as the water passes through. The baskets can be detached and removed from the structure in order to empty the debris. In addition, the multiple low water dams within The Floodway also serve as trash and debris collectors.

The trash collectors and low water dams are included in the TRWD routine floodway maintenance program that is triggered into effect with a 0.5 inch storm event. After such an event, the trash collectors are visually inspected for capacity and damage. The cleaning schedule for the nets is dictated by the frequency of storms. The frequency and quantity of trash removed at each structure is documented.

8.6 Impaired Water Bodies and Total Maximum Daily Load (TMDL) Requirements

1. *Discharges of the pollutant(s) of concern to impaired water bodies where there is a TCEQ and an EPA-approved total maximum daily load (TMDL) are not eligible for this permit unless they are consistent with the approved TMDL. A water body is impaired for purposes of the permit if it has been identified, pursuant to the latest TCEQ and EPA-approved Texas Integrated Report Index of Water Quality Impairment, as not meeting Texas Surface Water Quality Standards.*
2. *The permittees shall control the discharges of pollutants(s) of concern to impaired waters and waters with approved TMDLs as provided in sections(s) a below and shall assess the progress in controlling those pollutants.*

- a. *Discharges to Water Quality-Impaired Water Bodies with an Approved TMDL*

For any portion of the MS4 the discharges to a portion of a watershed with an approved TMDL, and because stormwater has the potential to cause or contribute to the impairment, the permittees shall include in the SWMP controls targeting the pollutant(s) of concern along with any additional or modified controls required in the TMDL and this section.

8.6.1 Targeted Controls

The SWMP must include a detailed description of all targeted controls to be implemented, such as identifying areas of focused effort or implementing additional Best Management Practices (BMPs) to reduce the pollutants(s) of concern in the impaired waters.

The I-Plan for Twenty-One Total Maximum Daily Loads for Bacteria in the Greater Trinity River Region revised June 15, 2017 includes targeted controls that they City of Fort has completed or is going to complete to address bacteria concerns in the TMDL areas, see **Table 1**. The Lower West Fork Trinity River from the confluence with Johnson Creek upstream to the confluence of Village Creek (assessment segment 0841_02) lies partially within the jurisdictional boundary of the City of Fort Worth.

Table 1. Targeted Controls for bacteria reduction

Targeted Control	Implementation Strategy	I-Plan Table	Targeted Control Description	Implementation Schedule (based on Regional I-Plan and current CFW practices)
Wastewater treatment facility effluent limits	1.0	8	Responsible entities will monitor E. coli concentrations in WWTF effluent as required by individual WWTF permits.	Immediate as permit changes/renewals are made
Lift station evaluation	1.2	11	Survey and evaluate existing lift stations to determine the appropriateness of implement BMPs to prevent SSOs caused by lift stations.	2018
Regional participation in FOGs Program	1.3	12	Continue participation in the regional FOG education program.	Ongoing
Sanitary sewer overflow reporting	1.4	13	Increase accuracy of SSO reporting through form changes, electronic reporting, and licensing.	Ongoing
Liquid waste management and liquid waste hauler program expansion	1.7	16	Expand inspection programs to include permitting, inspections, and tracking of liquid waste haulers through sample ordinances and online BMP library.	2028

Targeted Control	Implementation Strategy	I-Plan Table	Targeted Control Description	Implementation Schedule (based on Regional I-Plan and current CFW practices)
MS4 participation in Regional Stormwater Management Program	2.0	17	Include bacteria in RSWMP program efforts and materials.	Ongoing
Local Supplemental Environmental Projects	2.1	18	Adopt or continue pursuing local SEPs in addition to fines, as part of escalating enforcement programs for unfunded local stormwater projects to reduce bacteria loading.	2019
Adoption of GI and LID standards by municipalities	3.0	24	Expand the use of GI, LID, and iSWM to slow stormwater flow and increase filtration thereby causing a reduction in bacteria in stormwater runoff.	2021
Construction sites	3.2	26	Implement inspection protocols, educational materials, and workshops available to all stages of construction and all interested parties.	Immediate
Feral hog management	4.0	28	Feral hogs are detrimental to the environment and can increase bacteria loads.	2019
Ordinance evaluation for livestock waste management, stocking rates, and related measures	4.1	29	All MS4s define and identify properties and estimate livestock numbers to distinguish land use for the development of specific ordinance language.	2033

Targeted Control	Implementation Strategy	I-Plan Table	Targeted Control Description	Implementation Schedule (based on Regional I-Plan and current CFW practices)
Pet waste control measure	4.2	30	Create provisions for pet waste pickup within ordinances, conduct enforcement of ordinances, and increase public education programs.	2018
Waterfowl management plan	4.3	31	Evaluate the need for an avian management plan, with focus on measure to discourage avian feeding rather than population control measures.	2020
Pet waste collection stations and BMPs at parks	4.5	33	Use of BMPs in park areas with high concentrations of domestic animals, including pet waste stations.	Ongoing
Distribution of pet waste education materials	4.6	34	Increase education to citizens on issues such as the potential health risks from pet waste, the impact of pet waste on water quality, and tips for dealing with pet waste.	Immediate
Routine Monitoring	6.0	41	Continue routine sampling	Ongoing
Monitoring coordination forum	6.1	42	Participate in regional forum of monitoring participants.	Ongoing
Source identification and monitoring review	6.2	43	Review monitoring techniques and feasibility of source identification	2019
Ongoing stormwater public education, participation, and inclusion of bacteria-specific materials	7.0	44	Continue participation in regional programs and educational campaigns.	Ongoing

8.6.2 Measurable Goals

For each targeted control, the SWMP must include a measurable goal and an implementation schedule describing BMPs to be implemented during each year of the permit term.

The I-Plan lists measurable goals achieved by each targeted measure. Targeted controls along with implementation schedule are listed in the table above.

8.6.3 Identification of Benchmarks

The SWMP must identify a benchmark for the pollutant(s) of concern. Benchmarks are designed to assist in determining if the BMPs established are effective in addressing the pollutant(s) of concern in stormwater discharge(s) from the MS4 to the maximum extent practicable (MEP). The BMPs addressing the pollutant of concern must be re-evaluated on an annual basis for progress towards the benchmarks and modified as necessary within an adaptive management framework. These benchmarks are no numeric effluent limitations or permit conditions but are intended to be guidelines for evaluating progress towards reducing pollutant discharges consistent with the benchmarks. The exceedance of a benchmark is not a permit violation and does not by itself indicate a violation of instream water quality standards.

The benchmark must be determined based on one of the following options:

- A) If the MS4, or a portion thereof, is subject to a TMDL that identifies a Waste Load Allocation(s) (WLA) for permitted MS4 stormwater sources, then the SWMP may identify it as the benchmark. Where an aggregate allocation is used as a benchmark, all affected MS4 operators are jointly responsible for progress in meeting the benchmark and shall (jointly or individually) develop a monitoring/assessment plan as required in Part II.C.2.a.vi.*

- B) Alternatively, if multiple MS4s are discharging into the same impaired watershed with an approved TMDL, with an aggregate WLA for all permitted stormwater MS4s, then the MS4s may combine or share efforts to determine an alternative sub-benchmark value for the pollutant(s) of concern (e.g. bacteria) for their respective MS4. The SWMP must clearly define this alternative approach and must describe how the sub-benchmark value would cumulatively support the aggregate WLA. Where an aggregate benchmark is broken into sub-benchmark values for individual MS4s, the permittee is only responsible for progress in meeting its sub-benchmark value.*

The City of Fort Worth chooses to utilize option A and use the $WLA_{WLA_{SW}}$ of 1,920 billion MPN/day as the benchmark for AU 0841_02.

8.6.4 Annual report

The annual report must include an analysis of how the selected BMPS will be effective in contributing to achieving the benchmark value.

8.6.5 Impairment for Bacteria

If one of the pollutants of concern is bacteria, the permittees shall include focused BMPs addressing the below noted areas, as applicable, in the SWMP and implement as appropriate. If a TMDL Implementation Plan (I-Plan) is available, the permittees may refer to the I-Plan for appropriate BMPs or provide appropriate alternative BMPs. The SWMP and annual report must include the selected BMPs. Permittees may not exclude BMPs associated with the minimum control measure required under 40 CFR §122.34 from their list of proposed BMPs.

The BMPs shall, as appropriate, address the following:

A) Sanitary Sewer Systems

- 1. Make improvements to sanitary sewer to reduce overflows;*
- 2. Address lift station inadequacies;*
- 3. Improve reporting of overflows; and*
- 4. Strengthen sanitary sewer use requirements to reduce blockage from fats, oils, and greases.*

These BMPs or targeted controls will be implemented through the Water Department's Sanitary Sewer Overflow Initiative (SSOI) program.

B) On-Site Sewage Facilities—(for entities with appropriate jurisdiction)

- 1. Identify and address failing systems; and*
- 2. Address inadequate maintenance of On-Site Sewage Facilities (OSSFs).*

OSSFs are handled under the jurisdiction of Tarrant County.

C) Illicit Discharges and Dumping

Put in place additional effort to reduce waste sources of bacteria; for example, from septic systems, grease traps, grit traps, or other sources.

EQD will increase monitoring for illicit discharges in impacted areas. Available information on grease and grit traps will be collected as well as locations of known illegal dumping sites. Educational materials will be distributed as necessary.

D) Animal Sources

Expand existing management programs to identify and target animal sources such as zoos, pet waste, and horse stables.

The existing ordinance requiring citizens to pick up pet waste from public areas was expanded in 2018 to include private property. EQD in partnership with Animal Care and Control will expand educational messages targeted at pet waste and horse stables. There are currently no zoos located in impacted areas.

E) *Residential Education. Educate residents on the following:*

1. *Bacteria discharging from a residential site either during rainfall runoff events or directly;*
2. *Fats, oils, and greases clogging sanitary sewer lines and resulting overflows;*
3. *Maintenance and operation of decorative ponds; and*
4. *Proper disposal of pet waste.*

The City utilizes the Community Engagement Office to distribute targeted messages to citizens, home owners associations, schools, and other groups.

8.6.6 Monitoring or Assessment of Progress

The permittees shall monitor or assess progress in achieving benchmarks and determine the effectiveness of BMPs, and shall include documentation of this monitoring or assessment in the SWMP and annual reports. In addition, the SWMP must include methods to be used to assess progress.

A) *The permittees may use either of the following methods to evaluate progress towards the benchmark and improvements in water quality;*

1. Evaluating Program Implementation Measures

The permittees may evaluate and report progress towards the benchmark by describing the activities and BMPs implemented, by identify the appropriateness of the identified BMPs, and by evaluating the success of implementing the measurable goals.

The permittees may assess progress by using program implementation indicators such as: (1) number of sources identified or eliminated; (2) decrease in number of illegal dumping; (3) increase in illegal dumping reporting; (4) number of education opportunities conducted; (5) reductions in sanitary sewer flows (SSOs); or, (6) increase in illegal discharge detection through dry screening, etc.

2. Assessing Improvements in Water Quality

The permittees may assess improvement in water quality by using available data for segment and assessment units of water bodies from other reliable sources, or by proposing and justifying a different approach such as collecting additional instream or outfall monitoring data, etc. Data may be acquired from TCEQ, local river authorities, partnerships, and/or other local efforts as appropriate.

The City of Fort Worth will utilize Option A.1 for monitoring or assessment of progress.

B) Progress towards achieving the benchmarks shall be reported in the annual report. Annual reports shall report the benchmark and the year(s) during the permit term that the MS4 conducted additional sampling or other assessment activities.

8.6.7 Observing No Progress towards the Benchmark

If, by the end of the third year from the effective date of the permit, the permittees observe no progress toward the benchmark either from program implementation or water quality assessments as described in Part II.C.2.a.vi, the permittees shall identify alternative focused BMPs that address new or increased efforts towards the benchmark or, as appropriate, shall develop a new approach to identify the most significant sources of the pollutant(s) of concern and shall develop alternative focused BMPs for those (this may also include information that identifies issues beyond the MS4's control). These revised BMPs must be included in the SWMP and subsequent annual reports.

Where the permittees originally sued a benchmark value based on an aggregated WLA, the permittees may combine or share efforts with other MS4s discharging to the same watershed to determine an alternative sub-benchmark value for the pollutant(s) of concern for their respective MS4s, as described in Part II.C.2.a.iii.B above. The permittees must document, in their SWMP for the next permit term, the proposed schedule for the development and subsequent adoption of alternative sub-benchmarks values for the pollutant(s) of concern for their respective MS4s and associated assessment of progress in meeting those individual benchmarks.

If by the end of the third year, no progress towards the benchmark has been observed then the City of Fort Worth will identify alternative BMPs.