



RICHMOND

EST. **TEXAS** 1837

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STORMWATER MANAGEMENT PROGRAM

PREPARED JULY 2019

Table of Contents

1.0	Introduction.....	7
2.0	SWMP Revisions and Rationale:.....	8
3.0	Organization and Legal Authority.....	8
4.0	Description of Permit Area.....	8
5.0	Key Personnel	8
6.0	Stormwater Management Program Elements.....	8
	Element 1 – Public Education, Outreach, and Involvement	
	Element 2 – Illicit Discharge Detection and Elimination	
	Element 3 – Construction Site Stormwater Runoff Control	
	Element 4 – Post-Construction Stormwater Management	
	Element 5 – Pollution Prevention & Good Housekeeping	
 Element 1 – Public Education and Participation		
1.A	Community Education.....	9
1.B	City Staff Education.....	9
1.C	Construction Site Operator Education.....	10
1.D	Public Participation / Volunteer Activities.....	10
 Element 2 – Illicit Discharge Detection and Elimination		
2.A	Storm Sewer Screening and Illicit Discharge.....	11
2.B	Sanitary Sewer Overflow and Infiltration.....	12
2.C	Storm Drainage System Mapping.....	12
2.D	On-Site Sewage Disposal System Identification and Inspection.....	12
 Element 3 – Construction Site Storm Water Runoff Control Minimum Control Measure		
3.A	Construction Plan Review and Notification of Contractors.....	14
3.B	Maintain Legal Authority and Guidelines.....	14
3.C	Inspection of Construction Sites and Enforcement of Control Measure Requirements.....	14
3.D	Non-Storm Water Discharges.....	15
3.E	Receipt and Consider of Information Submitted by the Public.....	15
 Element 4 – Post Construction Storm Water Management In New Development and Redevelopment Minimum Control Measures		
4.A	Code Review and Updates.....	17
4.B	Establish Post-Construction Stormwater Management Program.....	17
4.C	Evaluation of Flood Control Projects.....	17
 Element 5 – Pollution Prevention/Good Housekeeping for Municipal Operations Minimum Control Measure		
5.A	Contractor Training and Oversight.....	18
5.B	Waste Disposal.....	19
5.C	Street Sweeping.....	19
5.D	Litter Control.....	19
5.E	Municipal Employee Training.....	19
5.F	Structural Control Maintenance.....	20
5.G	Municipal Stockpile Area.....	20
5.H	Facility Inspection Program.....	20
5.I	Cold Weather Conditions and Parking Lot/Road Maintenance.....	20
 Exhibits		
Exhibit 1 – Map of City of Richmond City Limits		
Exhibit 2 – Houston, Texas Urbanized Area Map		
List of Appendices		
Appendix A – City of Richmond Notice of Intent for Storm Water Discharge		
Appendix B – Copy of TPDES General Permit No. TXR04000		

DEFINITIONS

Best Management Practices (BMPs) - Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Daily Maximum - For the purposes of compliance with the numeric effluent limitations contained in this permit, this is the maximum concentration measured on a single day, by grab sample, within a period of one calendar year.

Discharge - When used without a qualifier, refers to the discharge of storm water runoff or certain non-storm water discharges as allowed under the authorization of this general permit.

Illicit Connection - Any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

Illicit Discharge - Any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges pursuant to this general permit or a separate authorization and discharges resulting from emergency firefighting activities.

Industrial Activities - manufacturing, processing, material storage, and waste material disposal areas (and similar areas where storm water can contact industrial pollutants related to the industrial activity) at an industrial facility described by the TPDES Multi Sector General Permit, TXR050000, or by another TCEQ or TPDES permit.

Maximum Extent Practicable (MEP) - The technology-based discharge standard for municipal separate storm sewer systems to reduce pollutants in storm water discharges that was established by CWA ' 402(p). A discussion of MEP as it applies to small MS4s is found at 40 CFR ' 122.34.

MS4 Operator – For the purpose of this permit, the public entity, and/ or the entity contracted by the public entity, responsible for management and operation of the small municipal separate storm sewer system that is subject to the terms of this general permit.

Notice of Change (NOC) - Written notification from the permittee to the executive director providing changes to information that was previously provided to the agency in a notice of intent.

Notice of Intent (NOI) - A written submission to the executive director from an applicant requesting coverage under this general permit.

Notice of Termination (NOT) - A written submission to the executive director from a permittee authorized under a general permit requesting termination of coverage under this general permit.

Outfall - For the purpose of this permit, a point source at the point where a municipal separate storm sewer discharges to waters of the United States (U.S.) and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the U.S. and are used to convey waters of the U.S.

Definitions - 1

Small Municipal Separate Storm Sewer System (MS4) – refers to a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by the United States, a state, city, town, borough, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under ' 208 of the CWA; (ii) Designed or used for collecting or conveying storm water; (iii) Which is not a combined sewer; (iv) Which is not part of a publicly owned treatment works (POTW) as defined at 40 CFR ' 122.2; and (v) Which was not previously authorized under a NPDES or TPDES individual permit as a medium or large municipal separate storm sewer system, as defined at 40 CFR §§122.26(b)(4) and (b)(7). This term includes systems similar to separate storm sewer systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. This term does not include separate storm sewers in very discrete areas, such as individual buildings. For the purpose of this permit, a very discrete system also includes storm drains associated with certain municipal offices and education facilities serving a nonresidential population, where those storm drains do not function as a system, and where the buildings are not physically interconnected to an MS4 that is also operated by that public entity.

Storm Water and Storm Water Runoff - Rainfall runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Management Program (SWMP) - A comprehensive program to manage the quality of discharges from the municipal separate storm sewer system.

Total Maximum Daily Load (TMDL) - The total amount of a substance that a water body can assimilate and still meet the Texas Surface Water Quality Standards.

Urbanized Area (UA) - An area of high population density that may include multiple MS4s as defined and used by the U.S. Census Bureau in the 2000 decennial census.

Waters of the United States - (from 40 CFR ' 122.2) Waters of the United States or waters of the U.S. means:

- (a) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) all interstate waters, including interstate wetlands;
- (c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - (1) which are or could be used by interstate or foreign travelers for recreational or other purposes;
 - (2) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

- (3) which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) all impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) the territorial sea; and
- (g) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

1.0 INTRODUCTION

The City of Richmond (City) is required under the Texas Pollutant Discharge Elimination System (TPDES) Permit Number TXR040589 to develop and implement a Stormwater Management Program (SWMP). The SWMP includes an overview of the ordinances and other regulatory mechanisms that provide legal authority to implement and enforce the requirements of the permit, and outlines the stormwater control measures (SCMs) used to meet permit requirements. The SWMP provides the City with a comprehensive plan that will serve as a guide for expansion, development, and management of the City’s storm drain system and is intended to comply with TPDES General Permit TXR040000 requirements.

This SWMP replaces and supersedes any and all previous SWMPs developed for the City of Richmond.

The SWMP is comprised of the following Elements

Section 2

Introduction: Provides the purpose and general format of the SWMP.

Section 3

SWMP Revisions and Rationale for Revisions: Provides a detailed description of the proposed revisions to the existing SWMP to be considered for the new SWMP and permit term.

Section 4

SWMP Program Organization: Provides an overview of the program including roles and responsibilities for implementation of the SWMP.

Section 5

Description of the Permit Area: Provides a description of the geographic boundary of the MS4 and watersheds within the corporate boundaries of the City.

Section 6

Impaired Water Bodies: Provides a description of monitoring activities and requirements associated with Total Maximum Daily Load (TMDL).

SWMP Elements: Provides a summary of each SWMP element, related SWMP activities, implementation schedules, indicators to measure success, and interim milestones.

2.0 SWMP Revisions and Rationale for Revisions:

This SWMP proposes several revisions to strengthen and streamline program administration. Revisions better define program intent, measurable goals, program outlay, and program function. A summary of revisions and rationale are as follows:

1. Nomenclature: The term “Best Management Practice” (BMP) has been replaced with “Stormwater Control Measure” (SCM). The use of the term SCM is specific to the field of stormwater.

2. SWMP Format: Element definitions within the SWMP have been restructured to include a brief description of the element’s purpose and overview, an outline of related activities, a table containing the applicable SCMs, measurable goals, and implementation schedule. This section streamlines the format of the previous SWMP and is intended to enhance management and execution of the SWMP.

3. Other Minor Changes: Other minor changes that have been made include:

- a) Measureable goals within each SCM have been amended and/or expanded to improve tracking and data analysis.
- b) Elements within each SCM have been expanded and amended to provide program flexibility and improved management/performance over the permit term.
- c) Additions to the inspection form to ensure compliance with site reporting requirements

3.0 ORGANIZATION AND LEGAL AUTHORITY

The City of Richmond, Texas, was incorporated on June 5, 1837, by Act of the Senate and House of Representatives of the Republic of Texas. On July 30, 1913, the City adopted a commission form of government.

The City Commission is the principal legislative body of the City. The Mayor presides at meetings of the City Commission.

The City provides the following services: public safety to include police and fire, highways and streets, sanitation, water and wastewater, recreation, public improvements, and general administration.

4.0 DESCRIPTION OF PERMIT AREA

The City of Richmond (the City) covers an area of 3.5 square miles. It is located in Fort Bend County, in southeast Texas, 30 miles west of Houston. It currently has 44 miles of streets maintained by the City and 3 city parks.

The City of Richmond is primarily a residential community with supporting commercial businesses. As the County seat, Richmond includes a substantial number of facilities operated by Fort Bend County. Surrounding Fort Bend County land use in 1996 was 83 percent agricultural.

Surface water consists of rivers, bayous and creeks. Flow from bayous is generally sluggish due to the gently sloping topography.

Endangered species in the MS4 area:

Common name	Scientific name
Coffin Cave mold Beetle	<i>Batridsodes texanus</i>
Tooth Cave ground Beetle	<i>Rhadine persephone</i>
Bee Creek Cave Harvestman	<i>Texella reddelli</i>
Bone Cave Harvestman	<i>Texella reyesi</i>
Navasota ladies-tresses	<i>Spiranthes parksii</i>

Discharges that would adversely affect the listed endangered or threatened species or its critical habitat are not authorized by this permit. Federal requirements related to endangered species apply to all TPDES permitted discharges, and site-specific controls may be required to ensure that protection of endangered or threatened species is achieved. The above listed species are considered as being endangered and are in our MS4 Area.

5.0 KEY PERSONNEL

In order to fulfill permit requirements, several City departments will play a vital role in the implementation of the SWMP, including Public Works, Engineering, Permits and Inspections, Planning, Parks & Recreation, Finance and Administration, Municipal Courts and the City Managers's Office. These City departments have the ability to perform many of the elements comprising a comprehensive storm water program; however, full program implementation will require additional funding resources throughout the course of the permit period.

In order to collectively utilize City resources during the implementation of the SWMP, the City will develop a Storm Water Management Team in order to keep participating departments actively involved in developing and implementing the program. This team will be established in Permit Year 1 and will meet, as needed, throughout the permit term. The Director of Public Works and his designatee will facilitate these meetings and coordinate all SWMP activities.

6.0 SWMP IMPLEMENTATION SCHEDULES

The implementation schedules in the SWMP are proposed, based on available information. Where measurable goals are accomplished ahead of schedule, it will be reported in the Annual Report. In the event implementation schedule adjustments are needed, revisions to the SWMP will be made in accordance with the permit.

ELEMENT 1 - PUBLIC EDUCATION, OTREACH, INVOLVEMENT AND PRTICIPATION

Public education and outreach is key to the success of a storm water management program. Through public education, people gain an understanding of how their actions affect storm water quality and become more informed about storm water quality issues in their community. When the public is aware of the impacts they have on their surroundings, they gain a sense of responsibility for those actions. This can lead to greater compliance for the storm water management program. The objectives of a public education program should be to promote a clear identification and understanding of the problem and the solutions and to promote community ownership of the problems and solutions.

The public education program must address the following target audiences:

- Residents (includes proper fertilizer, herbicide, and pesticide use; proper waste disposal; and proper on-site sewerage disposal system maintenance)
- Visitors
- Public service employees
- Businesses
- Commercial and industrial facilities
- Construction site personnel

Numerous storm water public education materials have already been developed by the EPA, state, and local agencies and are available for distribution or reprinting.

APPLICABLE STORMWATER CONTROL MEASURES

1.A COMMUNITY EDUCATION

Description

Storm drain marking heightens public awareness about how most drainage systems are directly connected to receiving waters without any treatment. Storm drain markings contain the message “Don’t Dump – Drains to Bayou” or a similar message. Other storm drain stencils, markings, or cast grates and manholes will be required for developers in new communities. Storm drain markings are most effective when combined with brochures distributed to the residents that provide more explanation of the impact of urban communities on storm water quality, drainage system design, and treatment of storm water. The City of Richmond will distribute pamphlets prepared by EPA, TCEQ and Texas Water Development Board to be distributed annually to resident’s homes. The information will also be distributed at community events, City department offices and upon request.

1.B CITY STAFF EDUCATION

Description

Educational information is disseminated to City employees through internet websites, new employee orientation, and group meetings. Topics include illicit discharges, floatables and litter, proper management and disposal of used oil and household hazardous wastes, and proper use, application, and disposal of pesticides, herbicides, and fertilizers. Task-specific training is provided, as required, to personnel directly involved in spill prevention and response

1. C CONSTRUCTION SITE OPERATOR EDUCATION

Description

The City of Richmond will utilize training material developed by NCTCOG for annual MS4 staff training. Staff trained includes Public Works and Code Enforcement. These trainings will focus on training staff to prevent storm water pollution while performing their normal job duties and training staff to recognize signs of illicit discharge/dumping.

1.D PUBLIC PARTICIPATION/VOLUNTEER ACTIVITIES

Description

The City will engage the community in stormwater related activities to encourage protection and enhancement of stormwater quality. This measure will include opportunities for a wide variety of people who live, work, and play in Richmond to participate in SWMP development and implementation.

The City promotes community awareness and protection of stormwater quality through participation in the, litter cleanup. Partnerships with the KRB, Keep Richmond Beautiful (KRB).

Table 6-1A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Schedule for Implementation

Table 6-1A Element 1: Public Education, Outreach, Involvement and Participation		
SCM	Activities	Deadline/Frequency
1.A Community Education	<ul style="list-style-type: none"> ▪ 20% Storm Drain Marked and Inspected ▪ 3,500 Brochures - Mail Educational Material ▪ Municipal Website Updates twice a year 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually ▪ December 31, 2019 and then Annually ▪ December 31, 2019 and then Semi-Annually
1.B City Staff Education	<ul style="list-style-type: none"> ▪ 100% of Public Works Staff Trained 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually
1.C Construction Site Operator Education	<ul style="list-style-type: none"> ▪ Evaluate NCTCOG training material and modify ▪ Evaluate strategy for training existing employees ▪ Document employees dates in which training was received 	<ul style="list-style-type: none"> ▪ December 31, 2019 ▪ December 31, 2020 ▪ December 31, 2019 and then Annually
1.D Public Participation	<ul style="list-style-type: none"> ▪ Clean-up performed by volunteers Annually 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually

ELEMENT 2 - ILLICIT DISCHARGE DETECTION AND ELIMINATION MINIMUM CONTROL MEASURE

The illicit discharge detection and elimination MCM is intended to detect and eliminate discharges to the MS4 system that are not entirely composed of storm water. As identified in the Phase II TPDES permit, MS4 permittees are required to develop a strategy to detect and eliminate illicit discharges to the storm drain system. An illicit discharge has been defined by the EPA as “any discharge into a separate storm sewer system that is not composed entirely of storm water.”

APPLICABLE STORMWATER CONTROL MEASURES

2.A STORM SEWER SCREENING AND ILLICIT DISCHARGE INSPECTION

Inspections are conducted in response to complaints received regarding illicit discharges and/or improper waste disposal or are triggered in response to information obtained through dry weather screening of the storm sewer system.

Signs of an illicit connection or discharge include:

- Abnormal water and mud/silt flows during the dry season
- Unusual Odors
- Discoloration or oily substances in the water, or stains and waste residue in ditches or drain boxes

The following actions should be taken if any of the above mentioned signs are observed during inspection. A follow-up inspection should be completed after an illicit discharge has been eliminated to confirm appropriate action was taken to cease discharge and evaluate if additional action is needed remediate the affected area:

1. Take photographs of the concern and field conditions documented. An example field report is provided as Attachment A (Illicit Discharge/Elimination Field Data Sheet).
2. Trace the flow upstream using storm drain maps and by inspecting upgrading manholes or ditches. Sampling and testing of water at the manhole, ditch, or outfall where the concern is first detected is generally not considered necessary if the water appears “clear” but, if deemed appropriate, can be performed using field kits or by taking grab samples for analysis.

Techniques used for detecting illicit discharges include:

- Dry Weather Outfall Inspections: Inspection areas prioritized for dry-weather screening by age of the neighborhood, age and condition of the infrastructure, asset type (storm sewer or open ditch), and areas with heavy industrial and commercial land uses. The outfalls are geo-located using a global positioning system (GPS) unit. Observations are documented. An example field report is provided as Attachment B (Dry Weather Field Inspection Report). A field sample kit is available for determining water quality concerns (pH and dissolved oxygen) when further investigation is needed.
- Illicit Discharge Investigations: Illicit discharges are traced from the discharge location to the source. Field observations, CCTV review, dye testing, and smoke testing are techniques used to determine the source location. The identified owner is then instructed to make the appropriate repair to cease discharge to the MS4.
- Service Request Responses Concerning Unusual Water Conditions: Staff may encounter illicit discharges through work order requests. Staff will contact the complainant to get more information on physical characteristics regarding the location of concern, when and where the concern was first noticed, and if the request is concerning unusual water conditions.

2.B SANITARY SEWER OVERFLOW AND INFILTRATION

The City of Richmond has aging sanitary sewer infrastructure and is challenged with sanitary sewer overflows (SSOs) and wet weather inflow and infiltration (I&I). The City actively employs several SCMs to limit the occurrence and frequency of sanitary overflows. The following practices are employed to improve reliability and function of the sanitary sewer system:

- Controlling roots through physical and chemical applications.
- Performing sewer main cleaning, conducting CCTV inspection, and inspecting sewer basins and manholes.
- Using GIS technology to database work order history, service interruptions, and capital improvements.
- Inspecting food establishments.
- Participation in public educational events and functions focusing on sewer use and proper disposal of cooking grease.

2.C STORM DRAINAGE MAPPING

The City of Richmond will develop a map of the storm drainage system that shows the Waters of the United States and the location of major storm sewer pipes, ditches, and other conveyances owned or operated by the City within the SWMP coverage, as well as any additional information needed by the City to implement this BMP. The map will also show the locations of major outfalls to the Waters of the United States.

- Revise and maintain City Drainage Map.
- Field verify, identify, locate, and map additional drainage features for City System.
- Maintain and revise as needed Storm Drainage System Map.

2.D ON-SITE SEWAGE DISPOSAL SYSTEM IDENTIFICATION AND INSPECTION

The City of Richmond will identify and require/facilitate repair of on-site sewerage disposal systems that are failing to treat wastewater properly. New on-site sewerage disposal systems will be inspected for proper installation. This program will facilitate improvement of failing on-site sewerage disposal systems and reduce potential contamination of surface and groundwater, including water supply wells. Ways to address failing on-site sewerage disposal systems include the following:

- Establish or require an on-site sewerage disposal system management program
- Ensure that new systems are sited and sized properly;
- Modify systems to ensure proper treatment;
- Field screen areas or complaint for indicators of failing systems.

2.E STORM WATER POLLUTION PREVENTION TRAINING

The City of Richmond will utilize training material developed by NCTCOG for annual MS4 staff training. Staff trained includes Public Works and Code Enforcement. These trainings will focus on training staff to prevent storm water pollution while performing their normal job duties and training staff to recognize signs of illicit discharge/dumping.

- Document employees and dates in which training was received.
- Evaluate NCTCOG training material and modify as necessary.
- Evaluate strategy for training existing employees.

Since the City occasionally hires new employees, an annual training effort will train new employees on storm water pollution prevention techniques within their first 12 months at the City, and will also provide a refresher course for existing employees to remind them of their role in storm water pollution prevention. Implementation of a training program will keep the City of Richmond in compliance with the TCEQ storm water regulations. Implementation of a training program will have a positive impact on the City water quality and reduce the risks of contamination of local ponds and streams.

The illicit discharge detection and elimination MCM is intended to detect and eliminate discharges to the MS4 system that are not entirely composed of storm water. As identified in the Phase II TPDES permit, MS4 permittees are required to develop a strategy to detect and eliminate illicit discharges to the storm drain system. An illicit discharge has been defined by the EPA as “any discharge into a separate storm sewer system that is not composed entirely of storm water.”

2. F ILLICIT DISCHARGE DETECTION ORDINANCE

The City of Richmond has developed an ordinance to address the detection and elimination of illicit discharges to the MS4. The ordinance will prohibit illicit discharges and connections, prohibit all non-storm water discharges that significantly contribute pollutants to the MS4, and prohibit illegal dumping. It includes appropriate enforcement procedures and actions and establishes legal authority to carry out inspection surveillance and monitoring procedures necessary to ensure compliance with the ordinance. The ordinance also identifies a list of occasional incidental non-storm water discharges that will not be addressed as illicit discharges. Due to limited legal authority, follow up procedures may include notification of the TCEQ.

- Revise and update existing ordinance
- Draft revised ordinance for public review and comment.
- Document instances of enforcement and action taken to eliminate illicit discharge and dumping
- Implement ordinance.
- Provide contact information for reporting illicit discharges or dumping

2. G ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

This section within the SWMP is developed to establish a program to detect and eliminate illicit discharges to the small MS4. The SWMP include the manner and process to be used to effectively prohibit illicit discharges.

The following elements will be part of the MCM for illicit discharge:

- Detection - The SWMP will list the techniques used for detecting illicit discharges.
- Elimination - The SWMP will include appropriate actions and, to the extent allowable under state and local law, establish enforcement procedures for removing the source of an illicit discharge.
- Provide contact information for reporting illicit discharges or spills.
- Respond to complaints and suspected illicit discharges identified during performance of routine operations.
- Develop program to shadow other field activities to screen for illicit discharges and develop follow-up.

Due to limited legal authority, follow up procedures may include notification of the TCEQ.

The City will determine the appropriate actions needed and appropriate staff to respond to illicit discharges and spills. City staff will be in charge of identifying the problem and conducting the appropriate actions in response to any illicit discharges or spills. Each response and action conducted will be documented and included in the annual report. The procedures for responding to illicit discharges and spills will be evaluated annually to ensure program effectiveness.

Table 6-2A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Schedule for Implementation

Table 6-2A Element 2: Illicit Discharge and Elimination		
SCM	Activities	Deadline/Frequency
<ul style="list-style-type: none"> ▪ 2A: Storm Sewer Screening and Illicit Discharge Inspections 	<ul style="list-style-type: none"> ▪ Annual screening for illicit discharge ▪ Survey 20% of the storm drain system outfalls per year 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually ▪ December 31, 2019 and then Annually
<ul style="list-style-type: none"> ▪ 2B: Sanitary Sewer Overflows and Infiltration 	<ul style="list-style-type: none"> ▪ Annual TCEQ Annual Sewer Overflow Reduction Plan ▪ 100% of food handling establishments 2 Times a Year ▪ 100% of Grease Trap Inspections 4 Times a Year 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually ▪ December 31, 2019 and then Semi- Annually ▪ December 31, 2019 and then Quarterly

<ul style="list-style-type: none"> ▪ 2C: Storm Drainage System Mapping 	<ul style="list-style-type: none"> ▪ Revise Storm Drainage Map Annually ▪ Survey 20% of the MS4's outfalls per year 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually ▪ December 2019 and then Annually
<ul style="list-style-type: none"> ▪ 2D: On-Site Sewage Disposal System Identification and Inspection 	<ul style="list-style-type: none"> ▪ Year 1 Evaluate strategy for inspection process ▪ Year 2 Establish SOP's for inspections ▪ Year 3 Establish on-site sewerage disposal system management program 	<ul style="list-style-type: none"> ▪ December 2019 ▪ December 2020 ▪ December 2021
<ul style="list-style-type: none"> ▪ 2E: Storm Water Pollution Prevention Training 	<ul style="list-style-type: none"> ▪ Year 1 Evaluate NCTCOG training material and modify as necessary ▪ 100% New Staff Trained Annually 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually ▪ December 31, 2019 and then Annually
<ul style="list-style-type: none"> ▪ 2F: Illicit Discharge Detection Ordinance 	<ul style="list-style-type: none"> ▪ Year 3 Revise and update Ordinance ▪ Year 4 Draft Revised Ordinance for Public Review and Comment ▪ Year 1 100% of all complaints documented 	<ul style="list-style-type: none"> ▪ December 31, 2021 ▪ December 31, 2022
<ul style="list-style-type: none"> ▪ 2G: Illicit Discharge and Elimination Program 	<ul style="list-style-type: none"> ▪ Year 1 document and respond to 100% of complaints ▪ 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually ▪ December 31, 2019 and then Annually

**ELEMENT 3 - CONSTRUCTION SITE STORM WATER RUNOFF CONTROL
MINIMUM CONTROL MEASURE**

Construction site storm water runoff control measures are designed to prevent soil and construction debris from entering the MS4 system from construction sites. During construction activities, vegetation and topsoil are stripped away, making the area especially vulnerable to erosion, and the activities performed on construction sites usually disturb a large amount of land and generate large amounts of waste. This process has generally been found to lead to high levels of sediment, phosphorus, nitrogen, pesticides, petroleum derivatives, construction chemicals, and solid wastes in receiving streams nationwide.

The City has an existing program to reduce the discharge of pollutants into the MS4 from construction sites. The program currently addresses construction projects that are greater than one acre in size, or that are part of a larger common plan of development. In addition, the program also addresses sites that are less than one acre in size, in response to a citizen request or complaint concerning that site.

APPLICABLE STORMWATER CONTROL MEASURES

The City identifies, inspects and requires the contractor to implement controls to reduce the discharge of pollutants from construction sites to the MS4. Activities in the City’s construction permit process include:

- Requiring the submittal and review of erosion control plans.
- Requiring a copy of the Notice of Intent (NOI) or Construction Site Notice (CSN).
- Requiring SWPPPs be maintained onsite by contractor.
- Inspecting projects in progress for the implementation of effective control measures, and conducting enforcement actions to reduce pollutant discharge(s) to the MS4, as necessary.

- Making building permit applicants aware of their responsibilities under the TPDES General Construction Permit.

3.A CONSTRUCTION PLAN REVIEW AND NOTIFICATION OF CONTRACTORS

The City utilizes the site development review and building permit process to review designs by others for stormwater management controls on development projects, including erosion and sediment controls to protect water quality. The City requires erosion control plans for construction activities. The City reviews the erosion control plans to identify the erosion and sediment controls for reducing discharge of pollutants from the individual construction site(s) and requires the contractor to maintain a copy of their SWPPP onsite to be made available to the inspector at any time. The City also informs the building permit applicants of their responsibility to provide a copy of a Construction Site Notice (CSN) or Notice of Intent (NOI) to support appropriate coverage under the TPDES General Construction Permit.

The City through the above mentioned development review processes or capital improvement design processes ensures that an erosion control plan and copies of the NOI or CSN are submitted to the City and that a SWPPP is maintained on-site by the contractor. The City's plan review process incorporates consideration of potential water quality impacts, receipt and consideration of information submitted by the public, and site inspection and enforcement of control measures to the extent allowable under state and local law.

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

3.B MAINTAIN LEGAL AUTHORITY AND GUIDELINES

The City will maintain its legal authority and update as necessary to comply with the TPDES General Construction Permit. The City will maintain guidance documents for construction and design professionals and make them accessible through the internet. Maintain and revise as necessary the stormwater quality requirements in the standard construction contracts for capital improvement projects.

3.C INSPECTION OF CONSTRUCTION SITES AND ENFORCEMENT OF CONTROL MEASURE REQUIREMENTS

The City of Richmond developed procedures for a construction site inspection program and enforcement of controls. Richmond will evaluate and revise (if necessary) the existing City construction inspection procedures as they apply to inspection of BMP's at construction site. The City Engineer will continuously evaluate construction site inspection program. Violations of the TPDES Construction General Permit No. TXR150000 will be reported to the TCEQ for enforcement.

All construction sites will design, install, implement, and maintain effective BMPs to minimize the discharge of pollutants to the small MS4. At a minimum, such BMPs must be designed, installed, implemented and maintained to:

- (i) Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters;

- (ii) Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and
- (iii) Minimize the discharge of pollutants from spills and leaks.

- Update construction site inspection procedures and inspection forms, if necessary. Operators will address control pollutants from vehicles washing, erosion and sediment controls, soil stabilization, and selection of appropriate BMP's and development of SWPPP.
- Perform enforcement proceedings in accordance with the adopted construction site ordinance and prohibited discharges.
- Resolve all non-compliance issues in a timely manner. Number of days to be determined during program development.

3.D ALLOWABLE NON - STORM WATER DISCHARGES

The following non-storm water sources may be discharged from the small MS4 and are required to be addressed in the small MS4s Illicit Discharge and Detection or other minimum control measures, unless they are determined by the permittee or the TCEQ to be significant contributors of pollutants to the small MS4:

- discharges from firefighting activities (firefighting activities do not include washing of trucks, runoff water from training activities, test water from fire suppression systems, and similar activities);
- fire hydrant flushing's;
- vehicle, external building, and pavement wash water where detergents and soaps are not used and where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material is removed);
- water used to control dust;
- potable water sources including water line flushing;
- air conditioning condensate; and
- Uncontaminated ground water or spring water, including foundation or footing drains where flows are not contaminated with industrial materials such as solvents.

The City of Richmond has not identified any of these discharges as significant contributors of pollution to the City's MS4. Therefore, these discharges will not be specifically addressed in the City's SWMP. However, in order to manage the release of potential pollutants from these discharges, the City will review current policies and procedures to minimize water quality impacts throughout the community. If in the future, the above-referenced discharges prove to be a significant contributor of pollution to the MS4, the SWMP will be revised to include BMPs for those discharges.

3.E RECEIPT AND CONSIDERATION OF INFORMATION SUBMITTED BY THE PUBLIC

The City of Richmond will develop procedures for the receipt and consideration of public inquiries, concerns, and information submitted regarding local construction activities. This shall consist of a tracking process in which submitted information from the public, both written and verbal, is recorded and then provided to the construction site inspector for possible follow-up.

3.F SITE PLAN REVIEW PROGRAM

The City of Richmond will utilize training material developed by NCTCOG for annual MS4 staff training. Staff trained includes Public Works and Code Enforcement. These trainings will focus on

training staff to prevent storm water pollution while performing their normal job duties and training staff to recognize signs of illicit discharge/dumping.

- Document employees and dates in which training was received.
- Evaluate NCTCOG training material and modify as necessary.
- Evaluate strategy for training existing employees.

Since the City occasionally hires new employees, an annual training effort will train new employees on storm water pollution prevention techniques within their first 12 months at the City, and will also provide a refresher course for existing employees to remind them of their role in storm water pollution prevention. Implementation of a training program will keep the City of Richmond in compliance with the TCEQ storm water regulations. Implementation of a training program will have a positive impact on the City water quality and reduce the risks of contamination of local ponds and streams.

CONSTRUCTION SITE STORM WATER RUNOFF CONTROL TRAINING

- Document employees and dates in which training was received.
- Evaluate NCTCOG training material and modify as necessary.
- Evaluate strategy for training existing employees.

Since the City occasionally hires new employees, an annual training effort will train new employees on storm water pollution prevention techniques within their first 12 months at the City, and will also provide a refresher course for existing employees to remind them of their role in storm water pollution prevention. Implementation of a training program will keep the City of Richmond in compliance with the TCEQ storm water regulations. Implementation of a training program will have a positive impact on the City water quality and reduce the risks of contamination of local ponds and streams.

Table 6-3A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Schedule for Implementation		
Table 6-3A		
Element 3: Construction Site Stormwater Runoff		
SCM	Activities	Deadline/Frequency
<ul style="list-style-type: none"> ▪ 3A: Construction Plan Review 	<ul style="list-style-type: none"> ▪ Review 100% of construction plans for erosion control 	<ul style="list-style-type: none"> ▪ December 31, and then Annually
<ul style="list-style-type: none"> ▪ 3B: Maintain Legal Authority and Guidelines 	<ul style="list-style-type: none"> ▪ Amend or propose new ordinance language where needed year 1 ▪ Finalize and Adopt new ordinance year 2 ▪ Implement New Ordinance year 3 	<ul style="list-style-type: none"> ▪ December 31, 2019 ▪ December 31, 2020 ▪ December 31, 2021
<ul style="list-style-type: none"> ▪ 3C: Inspection of Construction Sites and Enforcement of Control Measure Requirements 	<ul style="list-style-type: none"> ▪ Inspect 80% of all construction sites ▪ Document 100% of tracking procedure implementation 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually ▪ December 31, 2019 and then Annually

<ul style="list-style-type: none"> ▪ 3E: Receipt and Consideration of Information Submitted by the Public ▪ 3E: Storm Water Pollution Prevention Training 	<ul style="list-style-type: none"> ▪ Develop procedures for tracking information submitted by the public regarding local construction activities to include website email input within the first year ▪ Goal of 4 site visits each year ▪ Document 100% of tracking procedure implementation ▪ Document employees and dates which training was received Annually ▪ Evaluate training material and strategy for training existing employees 	<ul style="list-style-type: none"> ▪ December 31, 2019 ▪ December 31, 2021 and then Annually ▪ December 31, 2019 and then Annually ▪ December 31, 2019 and then Annually ▪ December 31, 2019 and then Annually
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**ELEMENT 4 - POST-CONSTRUCTION STORM WATER MANAGEMENT IN
NEW DEVELOPMENT AND REDEVELOPMENT
MINIMUM CONTROL MEASURE**

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

The City has an existing program to reduce the discharge of pollutants into the MS4 from construction sites. The program currently addresses construction projects that are greater than one acre in size, or that are part of a larger common plan of development. In addition, the program also addresses sites that are less than one acre in size, in response to a citizen request or complaint.

The City has existing processes in place for private and public development/redevelopment projects to assure site stabilization has occurred at the end of the construction period. As part of the acceptance or punch list inspection phase of the project any outstanding stabilization measures are noted for the contractor. The sites are also re-inspected one year after acceptance as part of a warranty inspection at which time any remaining control measures such as silt fencing that has not been removed is done so at that time.

APPLICABLE STORMWATER CONTROL MEASURES

4A. CODE REVIEW AND UPDATES

Regular Code updates maintain the City’s ability to enforce the requirements of the permit, in addition to staying current with any updates to state and federal laws. When necessary, Richmond Code will be updated to include water quality provisions to support enforcement including spill response, reflect changes in state and federal regulations, and improve private and public development/redevelopment planning measures to promote water quality, including provisions for adequate long-term operations and maintenance of BMPs.

- Number of ordinances reviewed
- Number of ordinances modified
- Number of new ordinances adopted

4B. ESTABLISH POST-CONSTRUCTION STORMWATER MANAGEMENT PROGRAM

The City shall require operators to control stormwater discharges from private and public development/redevelopment sites that discharge into the MS4 and disturb one acre or more, including projects that disturb less than one acre that are part of a larger common plan of development. This measure includes review and enforcement of structural and non-structural best management practices to protect water quality. Written procedures for program implementation (i.e. inspections, plans review and approval, etc.) shall be complete and in practice by the end of the permit term. This program will include requirements for maintenance activities for long term post construction stormwater controls by City or owner/operators of new or redeveloped sites.

- Number of plans reviewed
- Number of site inspections performed
- Number and types of enforcement actions enacted
- Evaluate continued operation and maintenance practices
- Number of plans reviewed

4C. LONG-TERM INSPECTION AND MAINTENANCE PLAN

The City of Richmond will revise the plan review process to require developers of commercial and residential property to submit plans and provisions for long-term inspection and maintenance of any structural controls implemented to maintain storm water quality. Maintaining proper long-term functioning of structural controls reduces the potential impact of storm water runoff.

- Develop procedure/checklist to review development plans for provision of long-term inspection and maintenance.
- Implement procedure/checklist to review development plans for provision of long-term inspection and maintenance.

Schedule for Implementation

Table 6-4A		
Element 4: Post Construction Stormwater Management		
SCM	Activities	Deadline/Frequency
<ul style="list-style-type: none"> ▪ 4A: Code Review and Updates 	<ul style="list-style-type: none"> ▪ Within 1 year identify needed change with regard to federal state, and local environmental regulations and design practices ▪ Within 2 years implement new changes ▪ Review 100% of Ordinances within 3 Years 	<ul style="list-style-type: none"> ▪ December 31, 2020 ▪ December 31, 2021 ▪ December 31, 2022
<ul style="list-style-type: none"> ▪ 4B: Inspection of Construction Sites and Enforcement of Control Measure Requirements 	<ul style="list-style-type: none"> ▪ Develop checklist for minimum elements required in SWPPP ▪ Track 100% of new development and redevelopment projects ▪ Document 100% enforcement actions enacted ▪ Document 100% of all plan review 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually ▪ December 31, 2020 and then Annually ▪ December 31, 2019 and then Annually ▪ December 31, 2019 and then Annually

<ul style="list-style-type: none"> ▪ 4C: Long-Term Inspection and Maintenance Plan 	<ul style="list-style-type: none"> ▪ Within 2 Years review and revise procedure/checklist to review development plans for provision of long-term inspection and maintenance. ▪ Within 3 Years 2 Implement updated procedure/checklist to review development plans for provision of long-term inspection and maintenance. 	<ul style="list-style-type: none"> ▪ December 31, 2021 ▪ December 31, 2022
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ELEMENT 5 - POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS MINIMUM CONTROL MEASURE

Municipalities conduct a variety of activities throughout their daily operations which have the potential to affect water quality throughout the community. With the adoption and implementation of storm water management policies and procedures, the City of Richmond will protect storm water quality and continue to deliver public services at the present service levels. A variety of municipal operations, will be affected by storm water management policies and procedures. These municipal operations include, but are not limited to, parks maintenance, open space management, road and rights-of-way maintenance, water/wastewater utilities, fleet and building maintenance, city construction projects, and storm water system maintenance.

APPLICABLE STORMWATER CONTROL MEASURES

5A. CONTRACTOR TRAINING AND OVERSIGHT

Contractors hired by the City for maintaining City-owned facilities are required to comply with good housekeeping practices, stormwater control measures, and facility-specific stormwater management procedures. Contractual authority will be drafted and used to establish guidelines and standards for general housekeeping and facility maintenance performed by City-hired contractors.

5B. WASTE DISPOSAL

The City of Richmond will establish a procedure for proper disposal of wastes including dredge spoil, accumulated sediments, and floatables removed from the MS4, removed from structural controls, or collected as a result of municipal operations and maintenance activities.

- Evaluate City facilities for proper waste disposal practices.
- Develop storm water waste management procedure.
- Train employees on proper storm water waste management procedures.
- Review and inspect City facilities for proper waste disposal.

5C. STREET SWEEPING

Street sweepers are provided by the State of Texas on a regular basis to minimize the migration of sediment and other pollutants from State Highways in the City of Richmond to receiving waters. Collected materials are properly disposed. Sweeping frequency is be prioritized by areas with highest pollution potential.

- Continue to identify priority areas for street sweeping.
- Sweep downtown streets weekly
- Sweep City-owned parking lots 4 times per year

5D. LITTER CONTROL

The City of Richmond will implement a scheduled program for removal of litter from municipal and public facilities, streets, parking areas and other City controlled property.

- Require litter control at municipal operations sites
- Continue programs to collect litter from parks, public facilities, parking lots and other City facilities on a regular basis.
- Sweep City-owned parking lots 4 times per year
- Collect litter from parks, public facilities and other public facilities on a weekly basis

5E. MUNICIPAL EMPLOYEE TRAINING

The City of Richmond will develop and provide employee training to prevent and reduce storm water pollution from activities such as park maintenance, fleet and building maintenance, new construction land disturbance, and storm water system maintenance.

Training programs ensure that storm water quality programs are properly implemented and BMPs are properly installed and maintained.

- Provide training materials for City employees.
- Require training to prevent and reduce storm water pollution from activities related to municipal operations.

5F. STRUCTURAL CONTROL MAINTENANCE

As part of the evaluation of the existing regional storm water management system, an inventory of existing city-managed structural controls will be established. An inspection and maintenance schedule will be established for these structural controls to promote their effective operation for storm water quality treatment, where applicable.

- Review and evaluate existing structural control maintenance procedures
- Develop inventory of District structural controls
- Develop inspection and maintenance schedule
- Implement inspection and maintenance program

5.G MUNICIPAL STOCKPILE AREA

The City of Richmond will install filter fabric fencing around the retaining structure for stockpiled road repair materials to minimize sediment or other stockpile material from entering storm water municipal runoff.

- Install filter fabric.
- Inspect and replace, if necessary, filter fabric fencing around stockpile.

5H. FACILITY INSPECTION PROGRAM

The City of Richmond will formalize municipal facility inspection procedures that potentially affect storm water quality. This will include routine inspection of facilities and equipment operated by the City.

- Continue Quarterly Inspection at all City Municipal Locations

5I. COLD WEATHER CONDITIONS AND PARKING LOT / ROAD MAINTENANCE

Control of sediment and debris from municipally-owned road and parking lot maintenance is addressed through several different initiatives. The City of Richmond will review and revise operating standards for road repair and maintenance to protect water quality. A SOP for road and parking lot maintenance will be drafted and used to establish guidelines and standards for use by City staff and contractors.

Application of salt or sand to roadways and sidewalks is performed on a limited basis. Traditionally, the City of Richmond experiences mild winters and is not forced to employ cold weather operations. A SOP for cold weather conditions will be drafted and used to establish guidelines and standards for use by City staff and contractors.

Table 6-5A provides a list of the activities, implementation schedule, and indicators to measure success for the SCMs described in this element.

Schedule for Implementation

Table 6-5A

Element 5: Post Construction Stormwater Management

SCM	Activities	Indicators to Measure Progress
<ul style="list-style-type: none"> ▪ 5A: Contractor Training ▪ 5B: Waste Disposal 	<ul style="list-style-type: none"> ▪ Train 100% of new employees on proper storm water waste management procedures annually ▪ Within 2 Years City will develop sop for contractors working in its MS4 ▪ Within 2 Years Evaluate City facilities for proper waste disposal practices ▪ Within 4 Years Revise storm water waste management procedure 	<ul style="list-style-type: none"> ▪ December 31,2019 and then Annually ▪ December 31, 2020 ▪ December 31, 2020 ▪ December 31, 2022
<ul style="list-style-type: none"> ▪ 5C: Street Sweeping 	<ul style="list-style-type: none"> ▪ Sweep City-owned parking lots 4 times per year ▪ Sweep Curb and Gutter Streets 4 times per year 	<ul style="list-style-type: none"> ▪ December 31, 2019 and then Annually ▪ December31, 2029, and then Annually
<ul style="list-style-type: none"> ▪ 5D: Litter Control 	<ul style="list-style-type: none"> ▪ Collect 80% debris in open ditches monthly ▪ Collect 100% litter from parks, public facilities and other public facilities weekly 	<ul style="list-style-type: none"> ▪ December 31,2019 and then Annually ▪ December 31,2019 and then Annually
<ul style="list-style-type: none"> ▪ 5E: Municipal Employee Training 	<ul style="list-style-type: none"> ▪ Within Year 1 provide training materials for City employees annually 	<ul style="list-style-type: none"> December 31,2019 and then Annually
<ul style="list-style-type: none"> ▪ 5F: Structural Control Maintenance 	<ul style="list-style-type: none"> ▪ Permit Year 2 Review and evaluate existing ordinance ▪ Permit Year 3 Acquire containment and response equipment ▪ Permit Year 3 require contractors to include requirements for spill kits and comply with spill prevention and response requirements, when applicable. 	<ul style="list-style-type: none"> ▪ December 31, 2020 ▪ December 31, 2021 ▪ December 31, 2022 and then Annually
<ul style="list-style-type: none"> ▪ 5G:Municipal Stockpile Area ▪ 5H: Facility Inspection Program ▪ Cold Weather Conditions ▪ Parking Lot/Road Maintenance 	<ul style="list-style-type: none"> ▪ Within Year 1 install and maintain filter fabric at all municipal stockpile areas ▪ Within 3 Years Inspection of all Municipal Facilities ▪ With 3 Years Draft SOP's ▪ Year 4 Implement and follow SOP's and ▪ Year 2 Review and revise SOP's if necessary ▪ Perform 80% Inspections within 3 Years 	<ul style="list-style-type: none"> ▪ December 31,2019 and then Annually ▪ December 31, 2021 ▪ December 31, 2021 ▪ December 31, 2022 and then Annually ▪ December 31, 2020 ▪ December 31, 2021

Exhibit 1
Map of City of Richmond City Limits

Exhibit 2
Houston, Texas Urbanized Area Map

Appendix A
City of Richmond
Notice of Intent for Storm Water Discharge

Appendix B
Copy of TPDES General Permit No. TXR04000