



## Stormwater Management Program (SWMP) Year 5 Goals & Training

November 26, 2018

PHII MS4 Permit – Year 5 Goals & Training

To: Fort Bend County LID No. 6

### Post-Construction Stormwater Management in New Development & Redevelopment

- Adopt Stormwater Guidance Manual
  - Adopt Preamble
  - Adopt Post-Construction Stormwater Management Program (Chapter 4)

**Draft Texas Pollutant Discharge Elimination System (TPDES) General Permit No. TXR040000, Small MS4 (Phase II) General Permit released August 24, 2018**

Significant, applicable changes to the TXR040000 include:

- Implementation of the MS4 Remand Rule
  - Requires language in SWMP to be “clear, specific, and measurable”
    - ~~“as needed,” “as deemed appropriate,” “as necessary,” “as applicable”~~
- EPA’s Electronic Reporting Rule
  - Electronic submittal of permit applications, waivers, and annual reports will be required by December 21, 2020 – This presents immense challenges to the TCEQ
- The permit application fee will now be \$400 instead of \$100.
- MS4 required to post its annual reports and the SWMP to its website, if the MS4 has one
- MS4 must confirm in annual reports that waterway(s) within its jurisdiction have not been added to the current Texas Integrated Report of Surface Water Quality 305(b) or 303(d)
  - If waterway has been added, the SWMP must address this within 2 years
- If certain modifications to the SWMP are necessary, permittees must submit Notice of Change (NOC)
  - In some cases, MS4 operator must give public notice of NOC
  - TCEQ will require the MS4 to post public notice to TCEQ’s website ([www.tceq.texas.gov](http://www.tceq.texas.gov)) if the MS4 does not have a website.
- Written procedures for inspections
  - Illicit Discharge Detection & Elimination
  - Pollution Prevention and Good Housekeeping for Municipal Operations

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## **Part I - Introduction**

### **Permit Overview**

The Texas Commission on Environmental Quality (TCEQ) issued the Texas Pollutant Discharge Elimination System (TPDES) General Permit Number TXR040000 (the Permit) on December 13, 2013. This Permit supersedes and replaces the TPDES General Permit No. TXR040000, issued August 13, 2007. The Permit provides authorization for stormwater and certain non-stormwater discharges from small municipal separate storm sewer systems (MS4s) to surface waters of the State.

The underlying purpose of the Permit is to require regulated small MS4s, such as the district (the District), to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of Section 402 of the Clean Water Act and Section 26.040 of the Texas Water Code.

In order to achieve these goals, the Permit requires the District to submit a Notice of Intent (NOI) and develop and manage a Stormwater Management Program (SWMP) for all stormwater discharges that reach Waters of the United States, as defined in the Clean Water Act and the Clean Water Rule, regardless of whether the discharge is conveyed through a separately operated storm sewer system. By implementing the SWMP and the selected best management practices (BMPs) in accordance with the Permit, the District will be considered meeting the standard of reducing pollutants to the MEP, and will be deemed in compliance with the Permit.

### **Legal Authority**

The District is a body politic and a political subdivision of the State of Texas created under the authority of Article XVI, Section 59 of the Texas Constitution and operating under and governed by the provisions of Chapters 49, 54, and 57 of the Texas Water Code, as amended. The District owns and operates a municipal separate storm sewer system (the Storm Sewer System) and is considered a “Non-traditional Small MS4 Operator” as defined in the Permit. The Permit defines the District as a Level 2 MS4 and is obligated to comply with all requirements, to develop rules and regulations and to exert enforcement actions to require compliance with this SWMP. Such required compliance may be implemented by the incorporation of rules into the District’s adoption the stormwater guidance manual (Stormwater Guidance Manual) via resolution of the District’s Board of Directors.

## **Part II – Storm Sewer User Responsibilities**

### **Discharges to the Storm Drainage System**

The District has a stormwater management program (SWMP) in effect. The SWMP includes this Stormwater Guidance Manual with which all the users of the District's stormwater system (the Storm Sewer Users) must comply.

### **District Responsibilities**

**Illicit Discharge Inspections** – It's the District's obligation to protect the Storm Sewer System within its boundaries. The District, or representatives of the District, may perform illicit discharge inspections within the District's boundaries. Should an inspection reveal an illicit discharge of any substance to the District's stormwater conveyance system, a Notice of Violation (NOV) will be issued to the Storm Sewer User. Any violation will be subject to fines and penalties as outlined in this Stormwater Guidance Manual, as may be amended from time to time. The District, at its sole option, may have the illicit discharge remedied at the Storm Sewer Users' expense.

### **Residential User Responsibilities**

Residential Customers may discharge storm water flows to the curb and gutter system. Otherwise, no physical connection to the Storm Sewer System shall be made by Residential Customers without the prior written consent of the Board of Directors of the District. The Board of Directors may grant, deny, or condition such consent at its sole discretion. Physical connection to the Storm Sewer System by a Residential Customer shall at all times be subject to such terms and conditions as may be specified by the Board of Directors, if and to the extent consent is given. Physical connection to the Storm Sewer System may be made by non-Residential Customers, subject to compliance with the provisions of the District's Stormwater Guidance Manual.

### **Contractor Responsibilities**

Contractors providing services to the District that have the potential to discharge pollutants in stormwater runoff are required to comply with these rules and to prevent the discharge pollutants in stormwater runoff to the maximum extent practicable. These services may include, but are not limited to, business entities providing the following:

- (a) Water and wastewater operations, maintenance, and repair;
- (b) Landscaping;
- (c) Trash and solid waste management;
- (d) Painting; or
- (e) General contractors.

It is required that business entities, as appropriate: (i) contain and report spills; and (ii) comply with District stormwater control measures, good housekeeping practices and procedures, and facility specific operating procedures relating to the reduction of pollutants in stormwater.

## Failure to Comply

### Construction Sites\*

Failure of each construction site operator (Construction Site Operator) to comply with these Construction Site Operator responsibilities will be considered a violation of the Stormwater Guidance Manual and may subject the Construction Site Operator to penalties as may be available to the MS4 operator, including those outlined in TXR150000 and Texas Water Code (TWC) Chapter 7.

\*The District reserves the right to charge the Construction Site Operator for any and all expenses incurred while inspecting or correcting the deficiencies listed in the Notice of Violation.

### Storm Sewer Users\*

The failure of a Storm Sewer User to comply with these Storm Sewer User responsibilities will be considered a violation of this Stormwater Manual and may be subject the Storm Sewer User to penalties as outlined in TXR150000 and TWC Chapter 7.

\*The District reserves the right to charge the Storm Sewer User for any and all expenses incurred while inspecting or correcting the deficiencies listed in the Notice of Violation.

**A Construction Site Operator or Storm Sewer User who fails to comply with the requirements of this Guidance Manual shall be subject to the penalties described herein. Any violation of the requirements of this Guidance Manual shall be considered a violation of the District's adopted rules and may be subject to civil penalties of up to \$10,000 per violation, in accordance with Chapter 49 of the Texas Water Code. Each day that a violation continues shall be considered a separate violation. These penalties shall be in addition to other penalties, fees, and charges provided by the laws of the State of Texas and in addition to any other legal rights and remedies of the District as may be allowed by law.**

## Additional Penalties for Notices of Violation

The failure of a Storm Sewer User, including Construction Site Operators to comply with the terms of this section will be considered a violation of the District's Stormwater Guidance Manual. If such a violation occurs, or if the District determines the existence of a serious threat to the integrity of the District's waters or Storm Sewer System, the District, in its sole discretion, may, in addition to all other legal remedies available to it., immediately terminate service or, at the Storm Sewer User's sole cost and expense, install the fixtures or assemblies necessary to correct the illicit connection or unacceptable discharge. If the District terminates service in order to preserve the integrity of the District's waters or Storm Sewer System, service will be restored only when the source of the potential contamination no longer exists or until additional safeguards have been taken and all fines/penalties have been resolved. Any and all expenses associated with the enforcement of this section shall be billed to the Storm Sewer User.

# **Post-Construction Stormwater Management in New Development & Redevelopment**

## **Post-Construction Stormwater Management Program**

### **Purpose**

Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving waterbodies. Many studies indicate that prior planning and design for the minimization of pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management. Development of Structural and Non-Structural Best Management Practices (BMPs) is important in mitigating the negative effects of stormwater pollution after major construction activities have ceased. All new development or redevelopment of private or public sites that discharge into the District's municipal separate storm sewer system (MS4), which disturb one acre or more, including projects that disturb less than one (1) acre, and are part of a larger common plan of development or sale within the boundaries of this District, must follow these post-construction stormwater guidelines.

### **Importance of Post-Construction Runoff Controls**

There are generally two forms of substantial impacts of post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in stormwater runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans. The second kind of post-construction runoff impact occurs by increasing the quantity of water delivered to the waterbody during storms. Increased impervious surfaces (e.g., parking lots, driveways, and rooftops) interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include streambank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

## Post-Construction Stormwater Guidelines

To address post-construction runoff from new development and redevelopment projects, all projects are required to follow current (at the time of development) pollutant discharge elimination guidelines as outlined by state, federal, and local law and local development standards. Owners and/or operators of new development and redeveloped sites must design, install, implement, and maintain a combination of structural and non-structural BMPs appropriate for the community that protects water quality.

The Environmental Protection Agency's (EPA) "Stormwater Phase II Final Rule" requires an operator of a regulated small MS4 (in this case, the District) to develop, implement, and enforce a program to reduce pollutants in post-construction runoff to their MS4 from new development and redevelopment projects that result in the land disturbance of greater than or equal to one (1) acre. The District is required to:

- Develop and implement strategies which include a combination of structural and/or nonstructural BMPs;
- Have an ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls to the extent allowable under State, Tribal or local law;
- Ensure adequate long-term operation and maintenance of controls; and
- Determine the appropriate BMPs and measurable goals for this minimum control measure.

By implementing and enforcing these post-construction stormwater guidelines, the District can maintain a higher standard of water quality that will translate to the post-construction control of stormwater pollution. Accordingly, the District will utilize adopted regulatory mechanisms to enforce any infractions regarding stormwater structural controls that fall within its jurisdiction. Written procedures describing how the District will implement post-construction stormwater guidelines are included below.

## **Plan Review and Approval Procedures for Permanent Stormwater Quality BMPs**

All parties seeking to develop or redevelop a site that discharges into the MS4 that disturbs one (1) acre or more, including projects that disturb less than one (1) acre that are part of a larger common plan of development or sale, will be required to obtain Stormwater Quality (SWQ) plan approval from the District. The SWQ plan approval will only be issued if the District approves the plans which illustrate the structural and/or non-structural BMPs proposed for the development. The review and approval is also required for an Inspection, Operations, and Maintenance Plan (Plan) which illustrates how stormwater quality BMPs will be inspected and maintained for the life of the project. Required BMPs must be appropriate for the community and must ultimately protect water quality.

## **Inspections and Long-Term Operations and Management of Permanent SWQ BMP for Third Party Owner/Operators**

The District will require permanent record keeping for all SWQ features that have been installed. The District may require that these records be produced on a periodic basis to show proper maintenance has taken place. All structural BMPs must be maintained in accordance with the original Plan that has been approved by the District.

## **Inspections and Long-Term Operations and Maintenance of Permanent SWQ BMPs for District-Owned Facilities**

The District will develop standard operating procedures describing inspection and long term operation and maintenance of SWQ facilities within the District's jurisdiction. The standard operating procedures will require the District to develop and maintain an inventory of these SWQ facilities to define and implement an inspection process, and to define operations and maintenance activities for each these SWQ facilities.

## Post Construction Measures

Recommendations of any post-construction stormwater features will be at the discretion of the design engineer for each project. Fort Bend County encourages the use of SWQ BMPs such as floatable collection screens, wet bottom features in detention basins, and other practices. Specific BMPs should be appropriate and site specific for the type of development in the District. The approval of any post-construction stormwater features will be at the discretion of the District and their associated consultants unless required by local, state, or federal regulations. The structural and nonstructural BMPs listed below are not exhaustive, but rather are examples of effective methods for eliminating the trash and large scale pollutants associated with post-construction runoff release. The EPA recommends that small MS4 operators develop and implement these two measures in tandem. The applicant can propose alternate methods for controlling post-construction pollutants. Requested exceptions to the listed structural BMPs, will be reviewed and approved by District consultants in accordance with Part III, Section B (2) of the Permit.

### Structural BMPs

According to the EPA's "Stormwater Phase II Final Rule," Fact Sheet 2.7 (EPA 833-F-00-009), the following structural BMPs could be used to satisfy the post-construction runoff minimum control measure:

**Stormwater Retention/Detention BMPs** - Retention or detention BMPs control stormwater by gathering runoff in wet ponds, dry basins, or multichamber catch basins and slowly releasing it to receiving waters or drainage systems. These practices can be designed to both control stormwater volume and settle out particulates for pollutant removal.

**Infiltration BMPs** - Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to groundwater, and, thereby, result in reduced stormwater runoff quantity and reduced mobilization of pollutants. Examples include infiltration basins/trenches, dry wells, and porous pavement.

**Vegetative BMPs** - Vegetative BMPs are landscaping features that, with optimal design and good soil conditions, remove pollutants, and facilitate percolation of runoff, thereby maintaining natural site hydrology, promoting healthier habitats, and increasing aesthetic appeal. Examples include grassy swales, filter strips, artificial wetlands, and rain gardens.



**Listed below are examples of structural BMPs recommended by Fort Bend County:**

**Bar Screens/Trash Rack Features** - Trash rack screens are effective in mitigating large scale debris and contaminants. They do not, however, provide adequate mitigation of sedimentation which is why their typical implementation is at the outfall point of sedimentation or detention basins. These basins are designed to retain stormwater and allow the sediment to filter to the bottom before discharging into local water bodies. Regular cleaning and maintenance of bar screens/trash racks will be needed to ensure proper function.

**Wet Detention Ponds/Settling Basins** - Wet detention basins and amenity lakes provide mitigation of sedimentation through settling of solids and slow release rates. Desilting of these basins should be evaluated periodically based on the sedimentation rates. Regular mowing and maintenance of side slopes and top of bank areas will be needed to ensure slope stability and minimizes soil loss into the settling basin.

**Additional examples of structural BMPs may include the following:**

**Underground Units/Oil Grit Trash Separator (OGT)** - New development or redevelopment on smaller tracts is typically best served by underground units when the required capacity will not support a settling basin feature. The units provide measurable data for collection and inspection. Regular cleaning and maintenance of OGTs will be needed to ensure proper function.

**Weirs** - For the tempered release of an amenity feature or detention pond, weir structures offer a consistent release flow and the opportunity for suspended solids to settle out. They can pose a flooding risk and do not promote the collection of trash, so should only be employed when a bar screen is not an immediate option. Regular cleaning and maintenance will be needed to ensure proper function.

**Non-Structural**

According to the EPA's "Stormwater Phase II Final Rule," Fact Sheet 2.7 (EPA 833-F-00-009), the following non-structural BMPs could be used to satisfy the post-construction runoff minimum control measure:

**Planning Procedures** - Runoff problems can be addressed efficiently with sound planning procedures. Local master plans, comprehensive plans, and zoning ordinances, as applicable, can promote improved water quality in many ways, such as guiding the growth of a community away from sensitive areas to areas that can support it without compromising water quality.

**Site-Based BMPs** - These BMPs can include buffer strip and riparian zone preservation, minimization of disturbance and imperviousness, and maximization of open space.

## Operations and Maintenance

The owner/operator of the SWQ facilities will, to the extent allowable under state, federal, and local law, ensure the long-term operation and maintenance of structural stormwater control measures installed through one or both of the following approaches:

### District-Owned Facilities:

Maintenance performed by the District. See Part III.B.5.

- (MCM5) Maintenance of controls will be performed at a frequency determined by the District and consistent with maintaining the effectiveness of the BMP.

### Privately-Owned Facilities

Maintenance performed by the owner or operator of a new development or redeveloped site under a maintenance plan.

- The District shall require the owner or operator of any new development or redeveloped site to develop and implement a maintenance plan addressing maintenance requirements for any structural control measures installed on site. The District shall require operation and maintenance performed is documented and retained on site, such as at the offices of the owner/operator, and made available for review by the District.
- The maintenance plan must be filed in the real property records of the county in which the property is located prior to receiving final approval for connection to the District's storm sewer system.

Furthermore, inspections are to be conducted at a frequency determined by qualified personnel selected by the District, who shall document and maintain records of enforcement actions and make them available for review by the TCEQ.

## Failure to Comply

Post-construction runoff and discharges are subject to the parameters outlined in the Illicit Discharge Detection and Elimination (IDDE) chapter of the SWQ guidance manual. Any illicit discharge relating to a post-construction stormwater control will be addressed via the IDDE policies and enforced under the adopted regulatory mechanisms, as applicable and this guidance manual.