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STORMWATER MANAGEMENT PLAN

Fort Bend County Municipal Utility District NO. 2

Fort Bend County, Texas

Texas Commission on Environmental Quality

October 9, 2020

IDS Project No. 0575-032-11

TBPE F-2726 | TBPLS 10110700



Section 1 – General Information

a. <u>Contact Information:</u>

i. MS4 Operator:

Fort Bend County Municipal Utility No. 2 (The District)		
: CN600736979		
3200 Southwest Freeway, Suite 2600		
Houston, Texas 77027		
Lynne Humphries		
(713) 860-6400		
(713) 860-6401		
lhumphries@abhr.com		
Municipal Utility District		
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13430 Northwest Freeway, Suite 700		
Houston, Texas 77040		
Chad E. Abram, P.E.		

ii. Responsible Party:

IDS Engineering Group	
Address:	13430 Northwest Freeway, Suite 700
	Houston, Texas 77040
Attention:	Chad E. Abram, P.E.
Phone:	(713) 462-3178
Fax:	N/A
Email:	CAbram@idseg.com

b. MS4 Location:

Fort Bend County Municipal Utility District No. 2 is in north Fort Bend County approximately 21 miles southwest of the central business district of Houston, Texas.

Latitude: 29º 40' 3"N Longitude: 95º 37' 48"W

Site Mailing Address: same as MS4 Operator See **Attachment 1** for location map

c. NPDES or TPDES Permit:

A NOI to obtain coverage under the TPDES general permit for discharge from small municipal separate storm sewer systems has been incorporated into this document. See **Attachment 3** for the NOI.



d. Description:

Fort Bend County MUD No. 2 MS4 (The MS4) is **not part of a coalition**. The MS4 is a **level 2** because it is a non-traditional small MS4 as defined by TPDES General Permit TXR 040000 Part 2 Section A 5. The estimated current population within The MS4 boundary is 8,100. The MS4 is not located in the Edwards Aquifer Recharge Zone.

i. MS4 Boundary:

A MS4 Boundary Map and Vicinity Map have been included in Attachment 1.

ii. Areas of Development:

Fort Bend County Municipal Utility District No. 2 contains approximately 625 acres. Most of The District is residential development with approximately 13 acres remaining to be developed.

iii. Drainage Areas:

The MS4 has an overall drainage area of 625 acres. The developed land is graded to drain into street gutters and storm sewers; then discharges into dry detention basins; which outfall to Keegans Bayou. Upper Oyster Creek is also located near the southwest portion of the District. However, all drainage in the MS4 up to the 100-year event is designed to drain to the Keegan's Bayou receiving waterbody. In the occurrence of a rainfall event that exceeds the 100-year, 24-hour event, runoff resulting from the rainfall event may drain from the MS4 drainage area to Upper Oyster Creek.

iv. Wetlands and Surface Water:

The water bodies receiving discharge directly from the MS4 are Keegans Bayou and Upper Oyster Creek. The discharge is to **an impaired waterbody** with **an approved total maximum daily load (TMDL)**. The MS4 acknowledges that a portion of the boundary is within the Upper Oyster Creek TMDL boundary, although the drainage system is designed to not discharge the Upper Oyster Creek watershed for all rainfall events up to and including the 100-year, 24-hour rainfall event. The TMDL target, describes and sets benchmarks for the pollutant of concern (POC). The pollutant of concern for Keegans Bayou is **Bacteria**. The pollutants of concern for Upper Oyster Creek are Bacteria and Depressed Dissolved Oxygen. See minimum control measure 1 and 2 (MCM 1 and 2) for best management practices (BMP's) addressing the pollutant of concern.

v. Waterbody Concerns:

The MS4 acknowledges that the following endangered species are located near, but not within, the area of the MS4 Boundary. The following species are included in the table below for reference:



Common Name	Species
Coffin Cave mold beetle	Batrisode texanus
Tooth Cave ground beetle	Rhadine persephone
Bee Creek Cave harvestman	Texella reddilli
Bone Cave harvestman	Texella reyesi
Navasota ladies' tresses	Spiranthes parksii

The MS4 acknowledges that Upper Oyster Creek Segment 1245 is listed a Water Quality Management Plan that includes a Waste Load Allocation (WLA) for E. Coli of 202 billion cfu per day (continuous) and 693 billion cfu per day (non-continuous), and Fort Bend County MUD No. 142 has established a WLA for Dissolved Oxygen of 6 mg/L (October 2018 Update to the Texas Water Quality Management Plan, December 12, 2028). The MS4 does not own or maintain a Wastewater Treatment Plant Facility and thus does not have a disinfected effluent outfall to the impaired waterbody. The MS4 acknowledges the above mentioned benchmarks and will limit the impacts to the impaired waterbody by maintaining the BMPs described in the MCMs within this SWMP in order to contribute progress toward achieving the goals of the TMDL. The MS4 will monitor the TMDL implementation plan and will assess the BMPs at the end of each MS4 permit term to determine if changes to the current BMPs are necessary to achieve these goals.

The MS4 acknowledges that Upper Oyster Creek has an approved Implementation Plan (Implementation Plan for Two Total Maximum Daily Loads for Dissolved Oxygen and One Total Maximum Daily Load for Bacteria in Upper Oyster Creek, Approved January 15, 2014). The implementation suggests the following practices for municipalities within the TMDL limits:

- Suggest municipalities/districts consider discouraging pigeon roosting near bridges and areas adjacent to the water bodies of Upper Oyster Creek.
 - MCM 5 includes a BMP to address this suggestion.
- Suggest municipalities/district consider trapping and removal of Muscovy ducks and other domestic duck species, and/or contraceptive practices (e.g., addling of eggs), in areas of the watershed prone to contributing to the bacterial loadings of the water bodies.
 - MCM 5 includes a BMP to address this suggestion.
- Work with Fort Bend County and other relevant road and bridge-maintaining entities to implement exclusion systems for large swallow colonies located on local or county bridges over the water bodies of the water shed.
 - Fort Bend County MUD No. 2 is not a road or bridge-maintaining entity and no bridges over waterbodies of Upper Oyster Creek are present within the MS4 boundary. The MS4 acknowledges this portion of the implementation plan. However, the practices are not applicable to the MS4 as described in the implementation plan.



e. Program Assessment

The current Storm Water Management Plan contains best management practices that help enhance stormwater quality. Over the permit term, we have assessed the efficacy of the current best management practices to the maximum extent practicable. There are many best management practices that are necessary but difficult to assess. Several best management practices have been successfully implemented during this current permit term. Namely:

- Several methods of public education and outreach
- Providing a platform for reporting illicit discharges
- Amending the District rate order to include enforcement actions against illicit discharges and construction violations
- Training of municipal staff
- Updating the sanitary sewer maintenance program
- And several other BMP's

During the previous permit term an anonymous source reported an illicit discharge within the MS4 after the District posted signage that encouraged reporting of illicit discharges. The District was able to execute enforcement actions based on the rate order. During the previous permit term, The District originally proposed to set up a hotline for reporting illicit discharges. After several public meetings The District decided that creating a website would be more effective than a hotline. This storm water management plan maintains and improves the successful best management practices of the previous permit. This storm water management plan also includes many additional best management practices. Many of the additional best management practices address reducing bacteria which is a constituent of concern for the receiving waters of the MS4. In addition, the MS4 will monitor the TMDL implementation plan for the impaired waterbodies listed in the SWMP and will assess the BMPs at the end of each MS4 permit term to determine if changes to the current BMPs are necessary to achieve these goals.

Section 2 – Stormwater Management Plan

The purpose of the Stormwater Management Program is to prevent pollution in stormwater to the maximum extent practicable (MEP) and to effectively prohibit illicit discharges to the system.

This SWMP has been developed according to the provisions of TCEQ general permit No. TXR040000. Accordingly, this MS4 is seeking authorization under this permit. The MS4 operator will be responsible for ensuring all requirements under this general permit are met by implementing a Stormwater Management Program.

a. MCM 1.A: Public Education, Outreach and Involvement: Public Education and Outreach

A public education and outreach program have been developed, implemented, and maintained to educate residents, visitors, public service employees, business, and commercial and industrial facilities. Below are the best management practices that are proposed to be implemented.

BMP / Activity	Quantifiable target	Deadline
Educate elementary school	Distribute educational material at	End of each permit
children on the effects of	local elementary school events	year (January 2020,
littering on the storm		January 2021,



system and downstream	Target: Provide 30 copies to	January 2022,
ecosystem.	Townewest Elementary	January 2022, January 2023,
		January 2023, January 2024)
Educate the public about	Hold procentation or cat up	
Educate the public about	Hold presentation or set up	End of each permit
stormwater pollution using	booth at one public event.	year (January 2020,
presentations and/or	Update educational content to	January 2021,
booths at public events. To	include education on illicit	January 2022,
address bacteria and	discharges.	January 2023,
dissolved oxygen concerns,	Target: One booth presentation	January 2024)
include information about		
pet waste and illicit		
discharges from septic		
tanks, grease traps and		
other illicit sources of		
bacteria.		End of ook warms'
Maintain information	Assess stormwater pollution	End of each permit
about stormwater pollution	information posted on the	year (January 2020,
on the FBC MUD 2 website	website during the annual permit	January 2021,
including posting this	renewal process. Verify that	January 2022,
SWMP and the annual	update has been completed.	January 2023,
reports	Target: One annual update	January 2024)
https://www.fortbendmu		
d2.org/		Fund of a sole in a music
Provide education about	Print educational material on the	End of each permit
lawn maintenance on the	water bill.	year (January 2020,
water bills. This provides	Target: 2,280 water bill inserts	January 2021,
information on vegetation establishment, water		January 2022,
conservation and yard		January 2023, January 2024)
chemicals.		January 2024)
Maintain inlet buttons that	Inspect all inlet markers in the	End of each permit
inform the public that all	MS4 and replace missing or	year (January 2020,
materials that go into the	damaged inlet markers	January 2021,
inlet eventually end up in	Target: 20% of inlet markers in	January 2022,
Galveston Bay	MS4 by the end of each permit	January 2023,
	year (20% each permit year will	January 2024)
	result in inspection of 100% of	54.104.1 y 202-1
	inlet markers by end of permit	
	year 5)	
*Dama: + +	γ year 3γ	2020 January 2021 V



b. MCM 1.b: Public Education, Outreach and Involvement: Public Involvement

Public inputs in compliance with minimum public notice requirements are organized to develop and implement this SWMP. Below are the best management practices that are proposed to be implemented.

BMP / Activity	Quantifiable target	Deadline
Hold public meetings	Solicit public's feedback in one	End of each permit
	meeting	year (January 2020,
	Target: one meeting	January 2021,
		January 2022,
		January 2023,
		January 2024)
Notify residents of public	Publish notice of public meetings.	End of each permit
meetings.	Target: 11 meeting notifications	year (January 2020,
		January 2021,
		January 2022,
		January 2023,
		January 2024) (as
		applicable)

*Permit terms years are Y1 January 2019-January 2020, Y2 January 2020-January 2021, Y3 January 2021-January 2022, Y4 January 2022-January 2023, Y5 January 2023-January 2024.

c. MCM 2: Illicit Discharge Detection and Elimination (IDDE)

An IDDE program is developed, implemented, and enforced to detect, investigate, and eliminate illicit discharges in the small MS4. Upon detection of any illicit discharges in the MS4 an investigation will be established based on the relative risk of pollution. Any detected illicit discharge posing immediate threat to human health or environment will be reported by the entity immediately to the TCEQ Regional Office. Investigation and documentation of the source of illicit discharges are to be tracked and documented with a minimum of date(s) of observance and results of initial and any follow-up investigations within the MS4. If investigation extends outside the boundary of the permitted boundary the adjacent MS4 Operator or TCEQ Regional Office should be notified. Upon identification of the source of illicit discharge, the MS4 shall notify the responsible party of the problem and require the responsible party to perform all necessary corrective actions in order to eliminate further discharges. See Attachment 2 for MS4 Map, the map shows the location of all "outfalls that are operated by the permittee and that discharge into waters of the U.S." and "all surface waters receiving discharges from the small MS4 outfalls." Using the following BMPs the permitted MS4 can evaluate measures being taken towards meeting the TMDL benchmarks through identification and elimination of illicit discharge sources, reduction of illegal dumping, increase in reporting through the MS4 public website, and improvements to detection through regular inspection throughout the MS4. Below are the best management practices that are proposed to be implemented.



BMP / Activity	Quantifiable target	Deadline
Maintain an updated utility map for the MS4.	Review utility map and update the map. Target: One annual review/update	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)
Provide information encouraging voluntary reporting illicit discharges into the MS4. This will also help address bacteria and dissolved oxygen concerns	Develop and implement a platform on the FBCMUD 2 website to facilitate voluntary reporting of illicit discharges into the MS4. Target: Develop platform	End of Permit Year 2 (January 2021)
Perform inspections of outfalls and detention/drainage facilities in the MS4.	Perform monthly inspections of outfalls and drainage/detention facilities. Target: 12 inspections of all outfalls/drainage facilities in MS4 annually	Monthly each permit term year (Y1 2019, Y2 2020, Y3 2021, Y4 2022, Y5 2023)
The MS4 to maintain enforcement actions for illicit discharges through the FBCMUD 2 Rate Order.	Review Section 22 of the Rate Order annually to confirm applicability. Report enforcement cases in the annual report. Target: One annual review of Rate Order	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)
Address bacteria and dissolved oxygen concerns with proper sanitary sewer line maintenance ⁽¹⁾	Target: Clean and Televise 10% of the sanitary sewer system	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)
Address bacteria and dissolved oxygen concerns with maintenance of high level alarms at the lift station site.	Run system alarm tests Target: One annual test	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)
Address bacteria and dissolved oxygen concerns by requiring sanitary sewer grease traps for all commercial development with kitchens within the district	Update site plan review checklist to include sanitary sewer grease trap requirement. Target: One update of checklist	End of permit year 3 (January 2022)



Address bacteria and dissolved oxygen concerns by providing pet waste signage and pet waste bag/disposal stations in park areas within the MS4.	Meet with homeowner's association about financing and constructing pet waste signage and bag/disposal stations in the MS4. Target: One meeting with HOA	End of permit year 3 (January 2022)
Perform inspections of On-site sewage facilities in the MS4 to address bacteria and dissolved oxygen concerns .	Perform monthly inspections of On-site sewage facilities. However, the MS4 does not operate or maintain any On-site Sewage Facilities. If any On-site Sewage Facilities are installed by the MS4, the MS4 will perform monthly inspections of the On- site Sewage Facilities. Target: Inspect all On-site Sewage Facilities owned/maintained by the MS4 on a monthly basis	Monthly each permit term year (Y1 2019, Y2 2020, Y3 2021, Y4 2022, Y5 2023) (as applicable)
Provide training to Municipal operators, contractors and sub- contractors within the MS4 about interacting with, tracing, removing, and reporting points of illicit discharges.	Distribute training materials to operator. Target: One distribution of training materials annually	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)
Perform inspections within MS4 that have received complaints.	Perform inspections for locations that have been reported. Target: Inspect every report	Monthly each permit term year (Y1 2019, Y2 2020, Y3 2021, Y4 2022, Y5 2023) (as applicable)
Develop and implement a plan including procedures for detection and reaction to illicit discharges	 Target permit Y2 2020: Review the TPDES General Permit to determine procedures to be included in the plan Target permit Y3 2021: Develop one illicit discharge detection and reaction plan and distribute the plan to the Operations and Maintenance group for review. The plan will include the following: A plan to detect and address non-stormwater discharges, including illegal dumping 	End of each permit year as described in the quantifiable target section (January 2021, January 2022, January 2023, January 2024)



 Notify other MS4s or TCEQ if illicit discharges or connections are observed List of responses to notification of illicit connections or illicit discharges Procedures for tracing the sources of illicit discharges Procedures for removing the sources of illicit discharges Procedures for responding to illicit discharges and spills
 Procedures for tracing the sources of illicit discharges Procedures for removing the sources of illicit discharges Procedures for responding to illicit discharges and spills
Target permit Y4 2021: Review the plan and revise as necessary Target permit Y5 2021: Implement and maintain procedures included in the plan

d. MCM 3: Construction Site Stormwater Runoff Control

Operators of construction sites one acre and greater will develop, implement, and maintain stormwater runoff control. Below are the best management practices that are proposed to be implemented. BMPs are established to prevent illicit discharges from construction sites of wastewater, fuels, oils, soaps, solvents, dewatering spillage, etc. (Address plan for development for final 13 acres)

BMP / Activity	Quantifiable target	Deadline
The MS4 operator	Obtain proof of NOI or small site	Monthly each permit
require proof of NOI or	notice for all construction	term year (Y1 2019, Y2
small site notices	projects within the MS4. This also	2020, Y3 2021, Y4
submittal before	applies to Common Plans of	2022, Y5 2023)
authorizing water and	Development as defined in the	
sewer connections.	TPDES General Permit.	
	Target: Check that requirement	
	has been fulfilled each month for	
	all new water and sewer	
	connection authorizations	
Review construction	Review all construction plans for	Monthly each permit
plans using the list of	projects within the MS4.	term year (Y1 2019, Y2
acceptable erosion and	Target: Check that requirement	2020, Y3 2021, Y4
sediment control	has been fulfilled each month for	2022, Y5 2023)
practices developed in	every active construction project	
the previous permit.		



Provide training to Municipal operators, contractors and sub- contractors within the MS4 whose primary job duties are related to implementing the construction stormwater program.	Distribute training materials to operator. Target: Distribute training material once annually	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)
Inspect construction sites for compliance with stormwater runoff control.	Weekly inspections to be performed by the MS4 operator (or representative) at every construction site. Target: Check that requirement has been fulfilled each month for every active construction site	Monthly check each permit term year (Y1 2019, Y2 2020, Y3 2021, Y4 2022, Y5 2023), and Weekly inspection each permit term year (Y1 2019, Y2 2020, Y3 2021, Y4 2022, Y5 2023) (as applicable)
Update the standard checklist for construction site inspections	Update the checklist to include erosion and sediment control, soil stabilization, vehicle washing containment, construction materials covering, address chemical spills. Target: One annual update	End of each permit year beginning in Year 3 (January 2022, January 2023, January 2024)
The MS4 to maintain enforcement actions for erosion and sediment control violations through the FBCMUD 2 Rate Order.	Review Section 8 of the Rate Order annually to confirm applicability. Report enforcement cases in the annual report. Target: One annual review of rate order	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)

e. MCM 4: <u>Post-construction Stormwater Management for New Development and</u> <u>Redevelopment</u>

Prior to tapping into the MS4 facilities, each new or redevelopment, including projects that disturb less than one acre that are part of a larger common plan of development or sale, must present a storm water quality management plan (SWQMP) per TCEQ requirements. This program is to be established for both public and private development sites and may utilize either on- or offsite mitigation and payment to address requirements. Below are the best management practices that are proposed to be implemented.



BMP / Activity	Quantifiable target	Deadline
MS4 Requires all new	Provide SWQMP for all	Monthly each permit
development to provide	construction projects, including	term year (Y1 2019, Y2
a storm water quality	new development and	2020, Y3 2021, Y4
management plan	redevelopment activities of one	2022, Y5 2023)
(SWQMP).	acre or greater (including	2022, 10 2020,
(011 Q).	projects disturbing less than one	
	acre that are part of a Common	
	Plan of Development) within the	
	MS4 in the annual reports.	
	Target: : Check that requirement	
	has been fulfilled each month	
	for new active construction site	
MS4 Requires all new	Provide SWPPP for all new	Monthly each permit
development to provide	construction projects, including	term year (Y1 2019, Y2
a storm water pollution	new development and	2020, Y3 2021, Y4
prevention plan	redevelopment activities of one	2022, Y5 2023)
(SWPPP).	acre or greater (including	
	projects disturbing less than one	
	acre that are part of a Common	
	Plan of Development) within the	
	MS4.	
	Target: Check that requirement	
	has been fulfilled each month	
	for new active construction site	
Inspect features such as	Perform monthly inspections of	Monthly each permit
detention ponds and	the facilities using the checklist	term year (Y1 2019, Y2
outfalls for damage.	developed under the previous	2020, Y3 2021, Y4
-	permit.	2022, Y5 2023)
	Target: 12 annual basin/outfall	
	inspections	
The MS4's rate order	Review Section 11 of the Rate	End of each permit
addresses enforcement	Order to confirm applicability.	year (January 2020,
actions for violations of	Report enforcement cases in the	January 2021, January
post-construction	annual report. Document and	2022, January 2023,
stormwater	maintain records of	January 2024)
management.	enforcement actions.	
	Target: One annual review of	
	rate order	



f. MCM 5: <u>Pollution Prevention/Good Housekeeping Measures for Municipal Operations</u> An operation and maintenance program will be developed and operated to reduce pollutant runoff from municipal operations in Fort Bend County MUD No. 2. Waste materials removed from the small MS4 must be disposed of in accordance with 30 TAC Chapters 330 or 335, as

applicable. Below are the best management practices that are proposed to be implemented.

BMP / Activity	Quantifiable target	Deadline
Provide training to Municipal operators, contractors and sub- contractors within the MS4.	Distribute training materials to operator. Target: One annual distribution of training materials	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)
Provide annual stormwater pollution prevention training documentation.	Target: Include the stormwater pollution prevention training documentation in the annual report	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)
Include attendee list as part of the training documentation.	Target: Include training attendee list in the documentation submitted with the annual report.	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)
Create a list of the facilities that are owned and maintained by Fort Bend County MUD No. 2	Target: Create one list and update to include any newly constructed facilities owned/maintained by MS4	End of each permit year (January 2020, January 2021, January 2022, January 2023, January 2024)
Evaluate O&M activities and identify potential pollutants of concern.	Target: Evaluate all O&M activities and identify all pollutants of concern	End of each permit year beginning in permit year 2 (January 2021, January 2022, January 2023, January 2024)
Develop an implementation and inspection plan to control pollutants of concern from O&M activities.	Target: Create implementation plan. The implementation plan will include proper removal and disposal of waste in accordance with the TPDES General Permit. Create inspection reports in the annual report.	January 2022 (implementation Plan) January 2023 (inspection reports)
Provide informational materials to contractors regarding compliance to operating procedures.	Distribute informational materials to contractors at the beginning of new construction. Target: One distribution per new construction project	Monthly each permit term year
Perform inspections and necessary maintenance	Perform monthly inspections of the facilities and any	Monthly each permit term year



for features such as detentions and outfalls.	maintenance to ensure proper operation of features.	
	Target: 12 inspections per permit term year and maintenance as necessary	
Pigeon exclusion practices	Review the implementation plan for Upper Oyster Creek Segment 1245 regarding pigeon exclusion practices by end of permit year 2. Develop and consider strategies to comply with pigeon exlusion practices by end of permit year three. Determine if the presence of pigeon roosting exists within the portion of the MS4 within the defined Upper Oyster Creek TMDL boundary by end of permit year four. If the presence of pigeon roosting was confirmed during permit year four, determine feasibility of implementing the strategies developed during permit year three by end of permit year five.	End of each permit year as described in the quantifiable target section (January 2021, January 2022, January 2023, January 2024)
Domestic duck exclusion practices	Review the implementation plan for Upper Oyster Creek Segment 1245 regarding domestic duck exclusion practices by end of permit year 2. Develop and consider strategies to comply with domestic duck exclusion practices by end of permit year three. Determine if the presence of domestic ducks exists within the portion of the MS4 within the defined Upper Oyster Creek TMDL boundary by end of permit year four. If the presence of domestic ducks was confirmed during permit year four, determine feasibility of implementing the strategies developed during	End of each permit year as described in the quantifiable target section (January 2021, January 2022, January 2023, January 2024)





permit year three by end of permit year five.

*Permit terms years are Y1 January 2019-January 2020, Y2 January 2020-January 2021, Y3 January 2021-January 2022, Y4 January 2022-January 2023, Y5 January 2023-January 2024.

g. MCM 6: Industrial Stormwater Sources (Required for Level 4 only) N/A